OMS

Getting started with the
Opcode MIDI System

OPCODE

Opcode
MIDI System

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Table of Contents

Part One: OMS Setup Tutorial

1. Getting Started 3
  Introduction to the Opcode MIDI System™ (OMS) 3
    OMS Setup Application 3
    System and Finder Version Requirements 4
  Installing the Opcode MIDI System 4
    Install OMS Using the Installer 4
    Install OMS Without Using the Installer 6
  Connect Your Macintosh To Your Standard MIDI Interface 6

2. Creating a Studio Setup Document 9
  Open OMS Setup 9
    AppleTalk 9
    Creating a Studio Setup Document 9
  Configuring Your Interface 11
    Standard Interface 11
    MIDI Time Piece 12
    Studio 5 13
    SampleCell 13
  Saving Your Studio Setup and Making It Current 13
  Defining Devices 14
  Defining Patch Bays 15
  Connecting Devices in the Studio Setup Document 17
  Connecting Devices to Patchers in the Studio Setup Document 18
    Patcher Port Assignments 19
      Patcher Program Assignments 20
  Connecting the Studio 5 and MIDI Time Piece 21
  Testing Your Studio Setup 21
    Testing Devices' MIDI Ins 22
    Testing Devices' MIDI Outs 22

3. Installing Applications 23
  OMS Compatible Applications 23
  Warnings for Hard Disk Owners 23
  System Compatibility 24
  Install Applications on Your Hard Disk 24
    De-Install Applications 26

4. OMS and MIDI Manager 27
  Using MIDI Manager 28
    The Studio Setup Document 28
    OMS MIDI Manager Driver 29
    Configuring the OMS MIDI Manager Setup Window 30
      Sources 30
      Destinations 31
      Sync 32

  - OMS MIDI Manager Ports in PatchBay 32
- Understanding OMS and MIDI Manager 33
  - What is MIDI Manager? 33
  - Why Use MIDI Manager With OMS? 33
  - What are Drivers? 34
  - Using OMS Drivers 34
  - Disabling OMS Drivers and Using MIDI Manager Drivers 34
  - OMS MIDI Manager Driver OMS Menu 35

Part Two: OMS Setup Reference

5. Studio Setup Editing 39
- Special Connection Considerations 39
  - MIDI Merging 39
  - MIDI Thru 40
  - One Device Occupying Two Ports 40
- Non-Standard Use of Patchers 41
- MIDI Time Piece Network Configurations 42
  - One MIDI Time Piece With One Cable 42
  - One MIDI Time Piece on Each Mac Port 43
  - One MIDI Time Piece With Two Cables 45
  - Two MIDI Time Pieces Networked With Two Cables 46
  - Two MIDI Time Pieces Networked With Three Cables 48

6. OMS Setup Menus 51
- Apple Menu 51
  - About OMS Setup... 51
- File Menu 51
  - New Studio Setup 51
  - Open... 51
  - Open Current Studio Setup 52
  - Close 52
  - Save 52
  - Save As... 52
  - Save and Make Current 52
  - Page Setup... 53
  - Print... 53
  - Quit 53
- Edit Menu 54
  - Undo 54
  - Cut 54
  - Copy 54
  - Paste 54
  - Clear 55
  - Show Clipboard 55
  - OMS MIDI Setup... 55
    - Use Apple MIDI Manager 56
    - Only OMS Applications 56
    - Allow Non-OMS Applications 56
  - All Notes Off (Panic) ! 56
  - Preferences... 57

        - AppleTalk 57
        - Patcher Delay 57
- Studio Menu 58
    - New Device... 58
    - New Patcher... 58
    - Edit Device Info... 58
        - Manufacturer and Model/Patcher 59
        - "Other" Name 60
        - Is Controller 60
        - Multitimbral 60
        - Receive Channels 60
        - Device ID 61
        - Send Sync 61
        - Receive Sync 61
        - Icon 62
        - Ports (Patchers) 62
        - Send Program Changes To (Patchers) 62
        - Receive Channels (Patcher) 64
    - Device Icon... 64
    - Interfaces... 64
    - Test Studio 64
    - Sort by Port/Name 64

7. Troubleshooting 65
- Simplify Your Setup 65
- AppleTalk 65
- Startup Documents (INITs, CDEVs) 65
- File Corruption 65
- MIDI Transmission Errors 66
- Sync Problems 66

Index 67

PART ONE:
OMS Setup Tutorial

- Getting Started
- Creating a Studio Setup Document
- Installing Copy-Protected Applications
- Using OMS and MIDI Manager

1 Getting Started

INTRODUCTION TO THE OPCODE MIDI SYSTEM™ (OMS)

The Opcode MIDI System (OMS) is Macintosh software that provides an environment in which multiple MIDI applications run simultaneously. Applications share Macintosh Modem and Printer ports and timing capabilities.

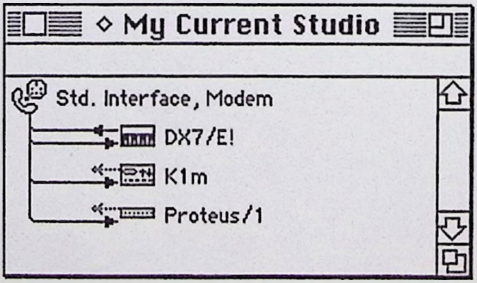
OMS stores information about your MIDI setup and provides each of your OMS compatible MIDI applications with this information. For example, with OMS, Vision and Galaxy are informed and dynamically updated about your studio's port assignments, interface types, device IDs, the direction of MIDI data transmission, and more.

OMS allows applications to access all the channels that your MIDI hardware supports. In addition, with OMS you can connect NuBus cards such as SampleCell.

OMS is a system extension (an INIT), located in your System Folder (in the Extensions folder if you're using System 7). Its services become available to applications automatically every time you start your computer. It doesn't take up much memory or control the serial ports until an OMS compatible application asks for its services.

OMS Setup Application

OMS Setup is an application that you use to tell OMS about your MIDI studio. You only need to indicate information about your setup once. This information is contained and displayed in a Studio Setup document. The following illustration shows a Studio Setup document that mirrors a studio with a standard MIDI interface hooked to the modem port, a DX7/E! connected in and out of the interface, and a K1 module and a Proteus/1 connected to the MIDI outs of the interface.



Current Studio Setup Document

You can create more than one Studio Setup to mirror more than one studio setup, for example you may have multiple studio configurations with different devices or you may work in various studios. You can only use one Studio Setup document at a time, and this is called the "current" setup. You can tell that a document is the current one if it has a diamond next to the document's name in its window's title.

If you change the connections in your MIDI studio or add or remove a device, make the corresponding changes in the Studio Setup document or create a new document that accurately represents the new setup.

System and Finder Version Requirements

Please verify that the versions of the System and Finder installed on your hard disk are appropriate for your computer. OMS requires System 6.0 or higher; it will not install itself upon startup if an older System is running. System software is available from your Apple dealer, user groups, and electronic information services.

INSTALLING THE OPCODE MIDI SYSTEM

You install OMS onto a hard disk using the OMS Installer application, which automatically places all items from the OMS master disk in the correct locations on your hard disk (make sure you're using the most recent version of the Installer). If you choose not to use the Installer, you can simply drag all items to the hard disk making sure you drag particular items to particular locations.

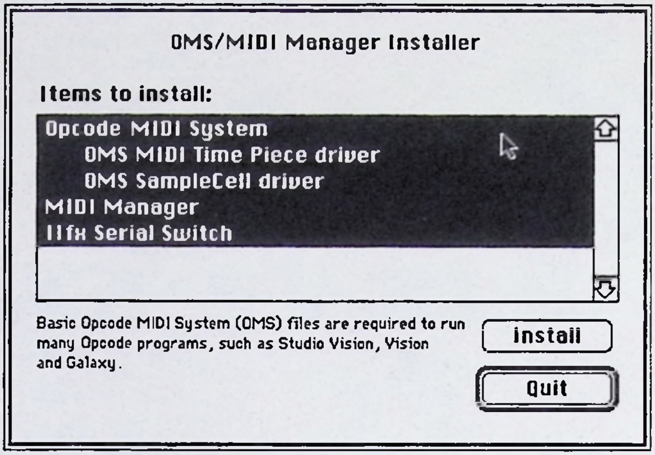
Install OMS Using the Installer

To install OMS on your hard disk using the OMS Installer:

OMS Installer

- Double-click the OMS Installer icon located on the first OMS disk.

You will see the installation dialog box for OMS.


OMS/MIDI Manager Installer

Items to install:

Opcode MIDI System
    OMS MIDI Time Piece driver
    OMS SampleCell driver
MIDI Manager
IIfx Serial Switch

Basic Opcode MIDI System (OMS) files are required to run many Opcode programs, such as Studio Vision, Vision and Galaxy.

OMS/MIDI Manager Installation Dialog Box

You can view a brief description of each item in this dialog box by positioning the mouse over it. The description is displayed at the bottom of the dialog box.

Some installed items go into an OMS folder created by the Installer and placed in the System folder, and some go directly into the System folder.

The OMS folder contains: OMS device-specific information; and the MIDI Time Piece, SampleCell, Studio 5, and Standard interface drivers.

The System folder contains: OMS (put in the Extensions folder under System 7.0), OMS/MIDI Manager Driver, the IIfx Serial Switch, and MIDI Manager.

When you've decided which item you want to install, select it by clicking it. If you want to select multiple items for installation, Shift-click them.

You will always need to select Opcode MIDI System. This installs OMS in your System Folder. This also creates a folder called the OMS Folder and places it in the System Folder. Certain items are installed in the System Folder and other items are installed in the OMS Folder.

- Select **Opcode MIDI System**
- Select the drivers for **MIDI Time Piece** or **SampleCell** if you're using these devices.
- Select **MIDI Manager** if you're using it. MIDI Manager 2.0 (without the Apple MIDI Driver) and the OMS MIDI Manager driver will be installed. Any older version of MIDI Manager (even if it has another name) will be removed. If you don't know what this is, don't bother installing it now.
- Select the **IIfx Serial Switch** if you are installing OMS on a IIfx. After you restart your computer, you must go to the Control Panel and set the Serial Switch to Compatible mode.

- Click **Install.**
- Quit and restart your computer.

IMPORTANT: Until you restart your computer, OMS will not be fully installed. This is particularly important when updating from an older version of OMS to a newer one.

Install OMS Without Using the Installer

If you choose to install OMS onto a hard disk without using the Installer application, you can do so by dragging icons from the master disk to the hard disk. You can use this technique to drag items to a floppy disk and run OMS from there, but this is not recommended.

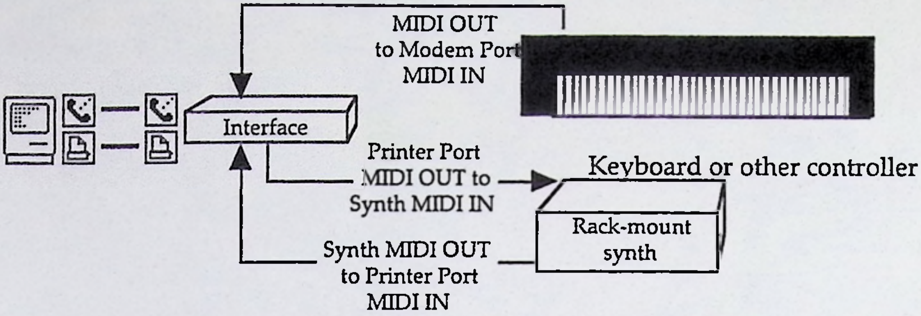
- Open the folder called "Put contents in system folder" on the OMS disk and Shift-select all items in it.
- Drag the items to the System folder on your hard disk (or on a startup floppy disk).
- Drag the OMS Setup application anywhere you like on your disk; it doesn't matter if it's in the System folder or not.
- Quit and restart your computer.

CONNECT YOUR MACINTOSH TO YOUR STANDARD MIDI INTERFACE

If you are not using a standard MIDI interface, please consult the interface's manual to see how to connect it to the Macintosh.

- Be sure the power is off on both the Macintosh and your MIDI interface. Attach your MIDI Interface to either the Modem port, or to the Printer port if the Modem port is occupied. Consult your interface's manual to see how any switches on the front panel must be set.
- Connect a standard MIDI cable from the MIDI OUT connector on your device to the MIDI IN connector on the interface box. (A Radio Shack 5 pin-to-5 pin DIN Cable catalog number 42-2151 can also function as a MIDI cable.)
- Connect another MIDI cable from the MIDI IN on the synthesizer to the MIDI OUT on the Macintosh interface.

If your device does not have a keyboard (such as a TX7 or a rack-mount unit), you may be able to hook a keyboard's MIDI OUT to the Macintosh's MIDI IN, so that you can play notes on the keyboard and hear them from your rack unit.



Sample Configuration for Two-Port Interface and Rack-Mount Synth

2

Creating a Studio Setup Document

In this chapter you'll create a Studio Setup document that represents your MIDI studio. Use the OMS Setup application to configure your interfaces, define MIDI devices and patchers, and connect them together in a Studio Setup document.

OPEN OMS SETUP

To open the OMS Setup application, double-click the OMS Setup icon located on your hard drive.

OMS Setup

AppleTalk

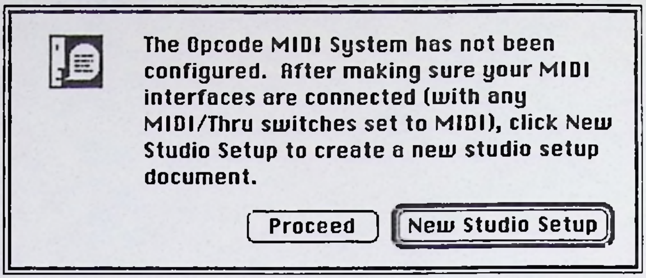
If AppleTalk is active the first time you open any OMS compatible application, you'll see a message that tells you that AppleTalk is active and asks whether you want to leave it on or turn it off.

AppleTalk is the Macintosh communication protocol for local area networks (LANs). If AppleTalk is active, no MIDI communication can take place over the Printer port and MIDI communication is made less reliable over the Modem port. It is recommended that you deactivate AppleTalk while using MIDI applications. If you click **Turn it Off**, OMS Setup will turn it off for you.

OMS Setup remembers the way you last answered this question (AppleTalk on or off) and displays the alert dialog box with your last choice as the default (highlighted) button.

Creating a Studio Setup Document

Next, an alert will come up telling you that the Opcode MIDI System has not been configured.

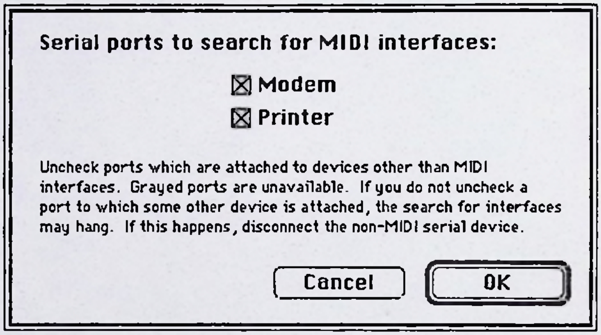


The Opcode MIDI System has not been configured. After making sure your MIDI interfaces are connected (with any MIDI/Thru switches set to MIDI), click New Studio Setup to create a new studio setup document.

Startup Dialog

- Click **New Studio Setup**.

A dialog box will prompt you to select the ports you'll be using for MIDI. OMS Setup will search for the ports you select here to verify that they're connected.



Serial ports to search for MIDI interfaces:

☒ Modem
☒ Printer

Uncheck ports which are attached to devices other than MIDI interfaces. Grayed ports are unavailable. If you do not uncheck a port to which some other device is attached, the search for interfaces may hang. If this happens, disconnect the non-MIDI serial device.

Startup Port Selection Dialog Box

IMPORTANT: If you don't have a MIDI interface connected to a port, don't check a box for it.

- Click the ports that have MIDI interfaces attached.
- Click OK.

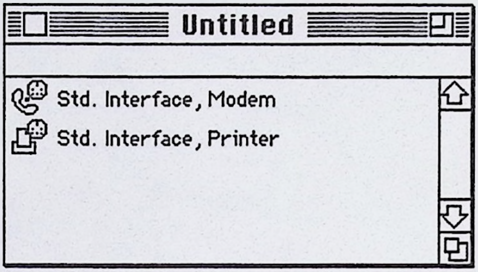
A progress dialog box opens as OMS searches for MIDI interfaces and cards. Icons representing the devices found appear in the Studio Setup document.

If OMS didn't find all of your hardware, make sure your MIDI interfaces are connected to the serial ports and that any MIDI/Thru switches are in the MIDI position. Make sure you're not running AppleTalk or other software that uses the serial ports. A NuBus MIDI card, such as SampleCell, may require that a driver file is installed in your System Folder. To search for hardware again, close the Studio Setup document, click **No** when asked if you want to save changes, then choose **New Studio Setup** from the **File** menu.

CONFIGURING YOUR INTERFACE

The following sections tell you how to indicate configurations for driver controlled devices. Just read the sections that pertain to your studio, then go to the section called "Saving Your Studio Setup and Making It Current."

Standard Interface

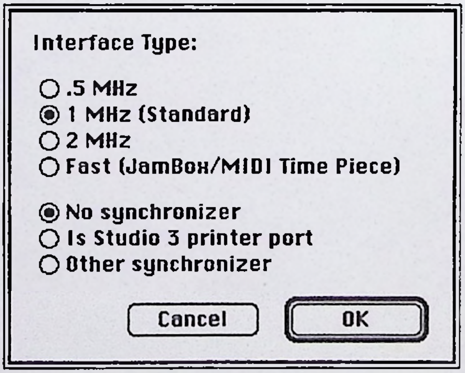

Untitled

Std. Interface, Modem

Std. Interface, Printer

New Studio Setup

- Double-click each interface icon to open its port configuration dialog box.


Interface Type:

○ .5 MHz
● 1 MHz (Standard)
○ 2 MHz
○ Fast (JamBox/MIDI Time Piece)

● No synchronizer
○ Is Studio 3 printer port
○ Other synchronizer

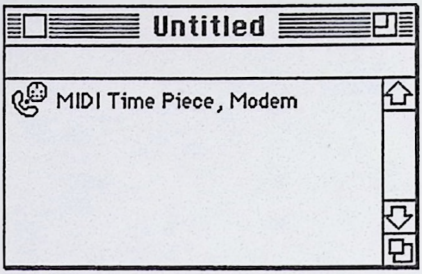
Standard Interface Setup

- Select the appropriate clock frequency setting for your interface (which will usually be determined automatically).
- If the interface connected to this port has no built in synchronizer functions select **No synchronizer**.
- If the port you are defining is connected to the Opcode Studio 3 interface's printer port, select **Is Studio 3 printer port**. If the interface connected to this port has some other built in synchronizer, select **Other synchronizer**.

- Click **OK.**

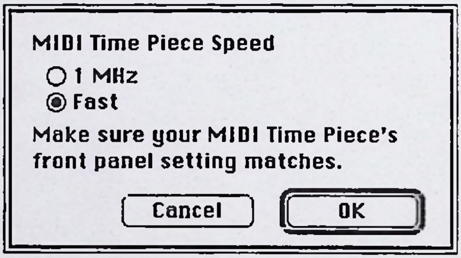
MIDI Time Piece

The MIDI Time Piece is Mark of the Unicorn's MIDI Interface.



New Studio Setup

- Double-click the MIDI Time Piece icon to open its port configuration dialog box.


MIDI Time Piece Speed

○ 1 MHz
● Fast

Make sure your MIDI Time Piece's front panel setting matches.

MIDI Time Piece Interface Setup

- Set the radio buttons to reflect the setting of the switch on the front panel of the MIDI Time Piece.
- Click **OK.**

NOTE: Occasionally, a MIDI Time Piece will appear as a Standard Interface. This appears to be a problem with its internal software. If this happens, turn the Time Piece off and back on again, close the Studio Setup document, say No when asked to save changes, then choose New Studio Setup From the File menu.

For more information about the MIDI Time Piece, refer to the section entitled MIDI Time Piece Network Configurations in the chapter, Studio Setup Editing Reference.

Studio 5

A Studio 5 menu will appear in the OMS Setup menu bar if the Studio 5 OMS driver is in your OMS folder. Refer to the Studio 5 documentation to see how to configure a Studio 5.

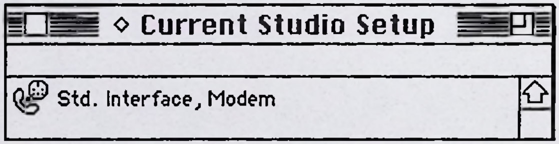
SampleCell

One SampleCell icon for each SampleCell card found by OMS Setup will appear in the Studio Setup document. You don't need to indicate anything for SampleCell; just make sure you have version 1.2 or higher of the SampleCell Editor and the SampleCell driver. To use SampleCell with MIDI Manager and not OMS, the SampleCell MIDI Manager driver must also be in your System folder. Drivers are available from Digidesign.

SAVING YOUR STUDIO SETUP AND MAKING IT CURRENT

Choosing **Save and Make Current** writes to disk what you have done so far and makes this Studio Setup document the currently active one. A small diamond is displayed in the window's title bar directly to the left of the name to show you the document is current.

- Choose **Save and Make Current** from the **File** menu.
- Name the file and click **Save**. (You can save the file anywhere you like.)



Current Studio Setup Document

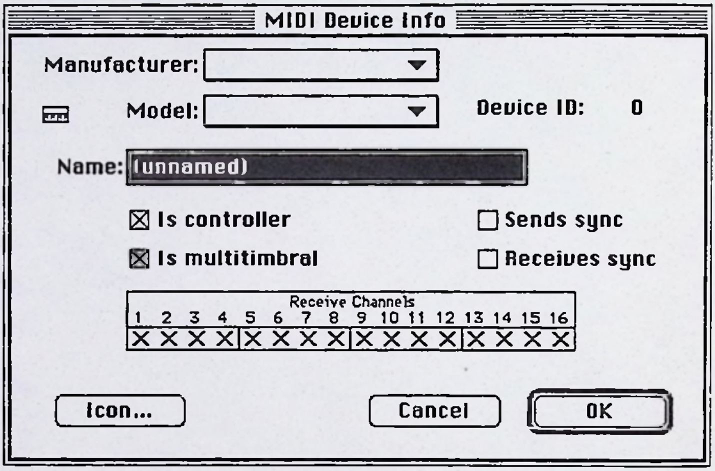
Making a document current tells OMS it's the one that accurately reflects how your MIDI devices are configured. OMS applications derive their knowledge of the devices in your studio only from the current Studio Setup document. You may have several Studio Setup documents, each which reflects different configurations of your studio, or of different studios. However, only one Studio Setup document can be current at a time.

DEFINING DEVICES

Now define the devices in your MIDI Studio using the **New Device** command in the **Studio** menu.

- If the current Studio Setup document isn't already open, choose **Open Current Studio Setup** from the **File** menu.
- Choose **New Device** from the **Studio** menu.

A dialog box opens in which you tell OMS Setup about your MIDI devices.



MIDI Device Info

Manufacturer:

Model:

Device ID: 0

Name: (unnamed)

☒ Is controller

☒ Is multitimbral

☐ Sends sync

☐ Receives sync

Receive Channels															
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

New Device Dialog Box

- Click the manufacturer and model pop-up menus and choose the appropriate items for one of your MIDI devices. (If applicable, this automatically checks the **Is Controller** and **Multitimbral** boxes.)
- Finish defining this MIDI device by filling in the rest of this information (receive channels, device ID, and so on).

If you are not certain how to define any of these parameters of your MIDI device, consult your device's manual. For detailed descriptions of the device parameters in this dialog box, refer to the "Studio Menu" section of the chapter entitled OMS Setup Menus.

- Click **OK**.

The newly defined device will appear in the Studio Setup document.

NOTE: If you selected an interface icon in the Studio Setup document prior to defining a new device, the newly defined device will be connected to the selected interface. If no item was selected, the new device will be displayed at the top of the document window and won't be connected to anything.

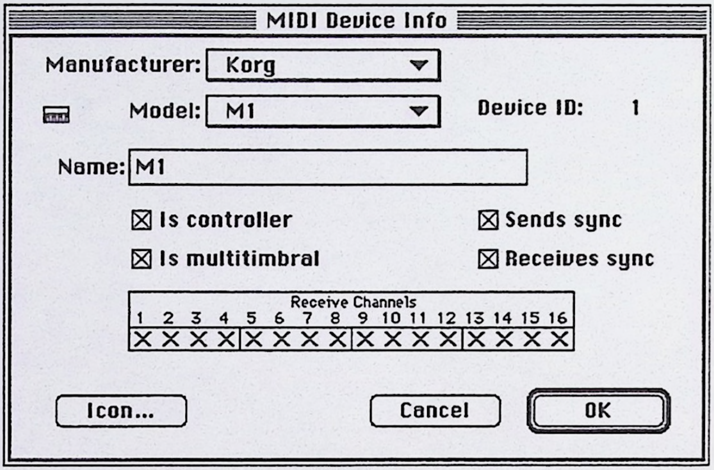
- Define all of the devices in your MIDI studio in this way.

If you have a MIDI patch bay, don't enter it yet. The section "Defining Patch Bays," which follows, tells you how to do this.

- Choose **Save** from the **File** menu.

Double-clicking on the device icon in the Studio Setup document will reopen the define device dialog and let you make any changes to the definition of the device.

The following illustration is an example of a correctly defined device.



Manufacturer: Korg

Model: M1

Device ID: 1

Name: M1

☒ Is controller

☒ Sends sync

☒ Is multitimbral

☒ Receives sync

Receive Channels

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Properly Defined Korg M1

The M1 is a multitimbral instrument with an on-board sequencer. It can send and receive sync, has a keyboard for generating notes, and can respond to 8 MIDI channels at once.

Now that the device and interface icons are now in the Studio Setup document, you'll need to connect device icons to the interface icons in this document.

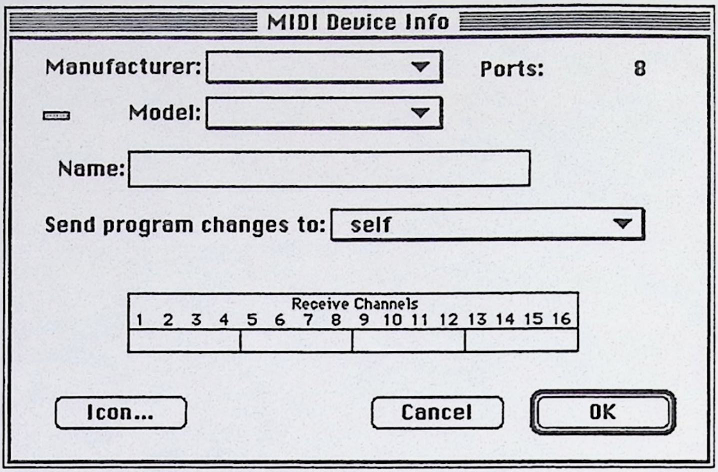
DEFINING PATCH BAYS

OMS works with MIDI patch bays (also called patchers) and automates the selection of programs within the patcher. If you're not using a MIDI patch bay, proceed to the next section, Connecting Devices in the Studio Setup Document.

NOTE: You don't have to define the Studio 5 or MIDI Time Piece as patch bays. OMS considers them interfaces.

- If the Current Setup document isn't already open, choose **Open Current Studio Setup** from the **File** menu.
- Choose **New Patcher** from the **Studio** menu.

You'll see a dialog box in which you'll enter information about your MIDI patcher.



Ports: 8

Send program changes to: self

Define Patch Bay Dialog Box

- Select the manufacturer and model of your MIDI patcher from the pop-up menus.
- Finish defining this MIDI patcher by filling in the rest of the information in this dialog box.

The "Send program changes to:" selection only appears if there is more than one patcher in your Studio Setup document. For a detailed explanation of this selection and the other patcher parameters in this dialog, refer to the Studio Menu section of the chapter entitled "OMS Setup Menus." If you are not certain how to define any of the other parameters of your MIDI patcher, consult your patcher's manual.

- Click **OK**.

The patch bay is now in the Studio Setup document; double-clicking on the patch bay icon will reopen the Define Patch Bay dialog box so you can make any necessary changes to the definition of the patcher.

- Define all of the patchers in your MIDI studio this way.
- Choose **Save** from the **File** menu.

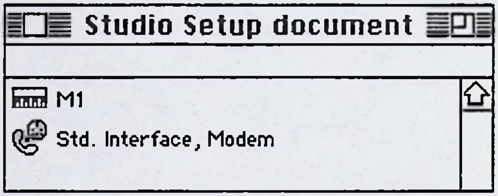
Now that the patch bay, interface, and your MIDI devices are in the Studio Setup document, you'll need to connect the patch bay to the interface and MIDI devices.

CONNECTING DEVICES IN THE STUDIO SETUP DOCUMENT

The idea of connecting devices in the Studio Setup document is to make the document mirror the way that your MIDI studio is actually configured. Once you have completely defined your Studio Setup document, it should function as a graphic representation of the MIDI components in your studio.

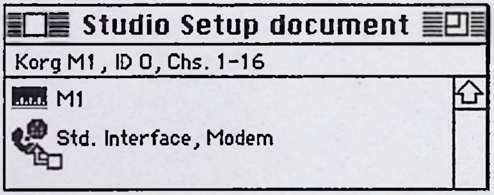
IMPORTANT: The Studio Setup document should be as accurate as possible—OMS applications derive their knowledge of the devices in your MIDI studio from it.

To connect a device to an interface:



Newly Defined, Unconnected M1

- Click the newly defined device in the Studio Setup document and hold the mouse down.
- Drag the mouse to the interface icon; your cursor will change to a connector.

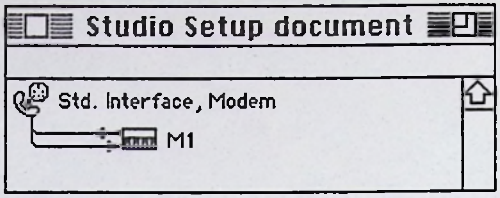


Korg M1, ID 0, Chs. 1-16

Connecting the M1 to the Standard Interface

- When the interface icon becomes selected (highlighted), release the mouse.

Devices can be connected to other devices and patchers, as well as interfaces this way.



Connected M1

The connected device displays lines that represent MIDI cables attaching it to the interface. Arrows on the cables indicate the direction in which the MIDI data flows through that cable. Clicking a cable's directional arrow will make the cable disappear and "unplug" it from the device. A gray arrow remains beside the device icon, indicating where to click if you want to reconnect that cable. Clicking both directional arrows disconnects the device and moves it to the top of the Studio Setup document.

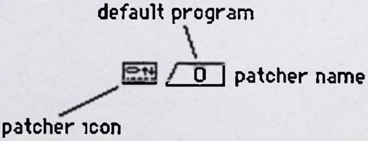
- Connect all of the devices in your Studio Setup document and make the cables (as represented by the arrows) mirror your actual setup.

You can edit the name of a device in the Studio Setup document at any time by selecting the name and typing a new name. The name can also be edited in the Define Device dialog box for the device. You can open a device or patch bay's Define Device Dialog box by double-clicking the device or patcher's icon.

NOTE: For explanations about representing MIDI Thru and merging in the Studio Setup document, refer to the Special Connection Considerations section in Chapter 4.

CONNECTING DEVICES TO PATCHERS IN THE STUDIO SETUP DOCUMENT

If there are no MIDI patch bays in your Studio Setup document, you can skip this section.



Patch bay in the Studio Setup document

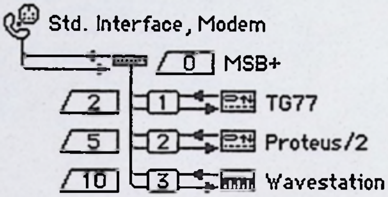
A patcher is displayed by a patcher icon, a small quadrangle with a number in it, and the patcher name. The number inside the small quadrangle represents the patcher's default program (the program the patcher stays in when it's not routing information into the Macintosh from a specific MIDI device).

NOTE: Since OMS applications expect to be able to send to any device at any time, the patcher's default program must connect the Macintosh output to all MIDI devices connected to the patcher, and connect the Macintosh input to the controller keyboard.

- Click the number in the quadrangle.
- Type the number of your patcher's default program.

Next, connect the MIDI devices to the patcher in the Studio Setup document to mirror their actual connections.

- Click the device icon that you want to connect to the patcher and hold the mouse down.
- Drag the cursor to the patcher icon; your cursor will change to a connector icon.
- When the patcher becomes highlighted, release the mouse.



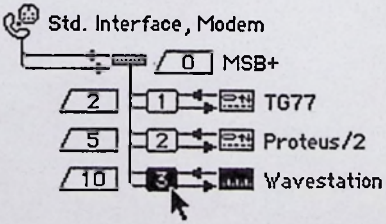
Patcher with Devices Connected

The patcher is now connected to the device and later can be reconnected to any other device using this method.

Patcher Port Assignments

Patchers have ports to which you connect MIDI devices. The ports are represented by numbers in small boxes in the MIDI path to each device. This port number must be set to reflect which port the MIDI device is actually connected to on the patcher.

- Select the number in the box by clicking on it.



Setting a Patcher Port

- Type the number of the port that the MIDI device is connected to. You can also drag the mouse vertically up and down while holding down the mouse button to increase and decrease the value.

NOTE: The numerical range of the patcher port assignments corresponds to the number of MIDI ports entered in the patch bay definition.

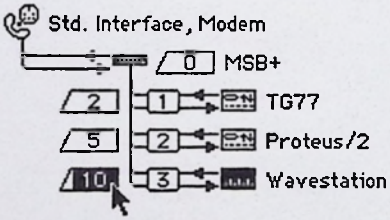
If you are using different numbered ports on your patcher for MIDI in and out of a single device, you will have to use two icons to represent the device; however, this type of connection is not recommended. See the "One Device Occupying Two Ports" section in the Studio Setup Editing Reference chapter for more details.

Patcher Program Assignments

Each port has a quadrangle to the far left that represents a patcher program for each device. Entering program change numbers here sends that program change to your patcher.

This patcher program is the MIDI program change number that you would send to your patch bay to connect that MIDI device for two way communication with the Macintosh (if you were getting patch banks from the device, for example).

- Select the number in the quadrangle by clicking it.



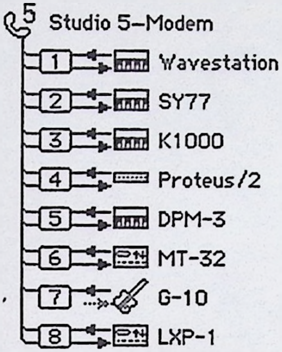
Setting a Patcher Program

- Type the patcher program number that connects the device for input and output to the Macintosh. You may also drag the mouse vertically up and down to increase and decrease the value.

NOTE: The program change numbers that get entered into OMS are the standard MIDI values, 0 to 127. These program changes correspond to a program in your patch bay. Some patchers observe alternate numbering conventions (1 to 128 or 11 to 88); you may need to consult your patcher manual to determine which MIDI program change number calls up which program number in your patcher.

CONNECTING THE STUDIO 5 AND MIDI TIME PIECE

The Studio 5 and the MIDI Time Piece are treated similarly by OMS Setup. These interfaces are similar to patch bays—they have ports to which you connect MIDI devices. The Studio 5 has 15 pairs of MIDI ins and outs that may be connected to MIDI devices and the MIDI Time Piece has 8. The following picture represents a Studio 5 in OMS Setup that has devices on 8 of its 15 MIDI ports.



Studio 5 with Devices Connected

The Studio 5 and MIDI Time Piece have ports to which you connect MIDI devices. The ports are represented by numbers in small boxes in the MIDI path to each device.

- Select the number in the box by clicking on it.
- Set this port assignment number to reflect which port the MIDI device is actually hooked to on the interface (Studio 5 or MIDI Time Piece).

You'll notice that the range of these numbers corresponds to the number of MIDI ports on your interface.

NOTE: For further details see "MIDI Time Piece Network Configurations" in Chapter 5.

TESTING YOUR STUDIO SETUP

After you've connected the MIDI devices in your Studio Setup document, it's a good idea to test the setup document to ensure that your MIDI studio is properly defined and to identify potential problems.

- Choose **Open Current Studio Setup** from the **File** menu.

This should be the Studio Setup document that you have just created.

- Choose **Test Studio** from the **Studio** menu.

The **Test Studio** command toggles test mode on and off. When test mode is active, **Test Studio** will have a check next to it in the **Studio** menu. Also, the cursor in the Studio setup document will change to an eighth note when it's over a MIDI device, patcher, or interface icon.

Testing Devices' MIDI Ins

You can test the flow of MIDI data from the Macintosh into each of the MIDI devices.

- Click on a MIDI device icon.

This will send random notes to the device on the MIDI channels that the device is listening to. A MIDI volume message will set every channel's volume to 127, to make sure the notes are audible. Listen for a cacophony of notes or watch for MIDI indicating LEDs on the MIDI devices that have them when you click on a device icon.

If you're using a patcher, clicking on the device icon will send the patcher program for two way communication to the device that is being tested; this is only true in **Test Studio** mode. Clicking on the patcher icon will recall the patcher's default program. As mentioned previously, your default program connects the Macintosh output to all MIDI devices connected to the patcher and connect your favorite controller keyboard for input to the Macintosh.

Testing Devices' MIDI Outs

To test MIDI data flow from the MIDI devices into the Macintosh, MIDI data must be generated from each MIDI device. On controller instruments just strike a key, pluck a string or hit a pad. When the Macintosh receives the MIDI data, a voice from the Macintosh says "MIDI received" and the line that represents the MIDI cable in the Studio setup document flashes.

NOTE: If your Studio Setup implies MIDI merging (multiple sources into one port), the wrong arrow may flash when testing MIDI connections from devices to the Macintosh. When MIDI comes in from any of those sources, only one of them is going to flash, and it won't necessarily be the one that really sent it. (When devices are merged, OMS can't distinguish the sources from each other.)

For devices that have no keyboard, the best way to test if MIDI data is getting to the Macintosh is to initiate a bulk dump from that MIDI device.

3 Installing Applications

OMS COMPATIBLE APPLICATIONS

Now that you have created a Studio Setup document that accurately reflects your MIDI Studio, try using this information in conjunction with OMS compatible applications. This chapter steps you through installing applications, such as Vision, Studio Vision, or Galaxy Plus Editors, which use in various ways information you entered in the Studio Setup document. You'll notice the installation procedure outlined here is different from that of installing OMS because these applications are copy-protected, whereas OMS is not.

Some applications (for example, Studio Vision) require additional installation procedures, so be sure to read the READ ME document on your application master disk for details; your application manual provides the same information, but many of you will prefer to get started before opening your manual. Another advantage to the READ ME is that it informs you of any changes so recent they could not be printed in the manual. Program improvements and precautionary advice contained in the READ ME provide you with the latest and most accurate information.

WARNINGS FOR HARD DISK OWNERS

IMPORTANT: Remember to look at the READ ME document on your application master disk ***BEFORE*** *opening your application; READ ME contains the most up to date information.*

Before installing a copy-protected application, you should de-install the following programs. After installation, you can install them again.

- **Tops™**
- **Virus Checkers:** GateKeeper, Virex (1.0 series; 2.0 is okay), and others.

The following actions will destroy a hard disk installed application. De-install any copy-protected applications before performing these actions and re-install them afterward.

- Using **Disk Express™** or **Disk Express II**, **HD Tune-Up™**, and other utilities that improve hard disk access time by rearranging files on your hard disk (also known as optimizing your hard drive).
- **Restoring** from a back-up. De-install the hard disk installed application before restoring from a backup, or reformatting your hard disk.

- Deleting a hard disk installed application by dragging it to the trash or using a disk utility program.

NEVER do any of the following:

- Never attempt to **de-install** an application that has been locked using the **Locked** control in the Finder's Get Info dialog box.
- Never use a utility such as DiskTop or ResEdit to alter in any way the invisible files named "Vision Key - 1" or "□□□□" or "□□□e'."

SYSTEM COMPATIBILITY

Make sure you are using Apple System Software 6.0.2 or newer. If a newer version came with your Macintosh, use it; if an older version came with your Macintosh, get the current version from your dealer.

Choose **About the Finder** from the **Apple** menu to see what version of the Finder you're using. Select the System file in the System Folder, and choose **Get Info** from the **File** menu to see the System's version. If no version number appears, you can tell what it is from the creation date of the System. Pre-June 1986 Systems are unacceptable. Systems 6.0 and above always identify themselves in the Get Info window.

System software is available from your Apple dealer, user groups, and electronic information services. To install Systems onto hard or floppy disks, Opcode recommends the use of the Installer program provided with Apple's system disks. (If you're working from floppy disks, drag-copying a System Folder from one floppy to another is another way of installing the System.) After using the Installer, you may need to use Font/DA Mover (provided with the System) to remove unwanted fonts and desk accessories and to provide additional disk space.

INSTALL APPLICATIONS ON YOUR HARD DISK

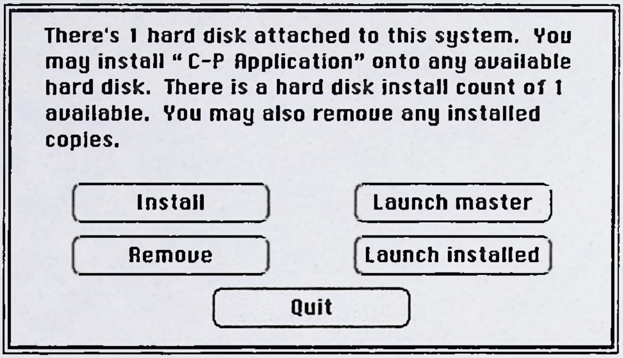
All Opcode application disks are shipped write-protected (locked)—which is how you should keep them at all times. Disks cannot be altered when it they're locked; you need to unlock them in order to perform a hard disk installation. Just slide the tab in the upper right hand corner to cover the opening.

To install an application on your hard disk:

- Start your Macintosh from the hard disk as usual.
- Throw any dragged copies of the application that you have on your hard disk into the trash.
- Insert the master disk into your disk drive.

- Double-click the disk icon so that you can see the contents of the floppy disk.
- Double-click the application as if you were going to run it from the floppy master.

You will see the following dialog box:



There's 1 hard disk attached to this system. You may install " C-P Application" onto any available hard disk. There is a hard disk install count of 1 available. You may also remove any installed copies.

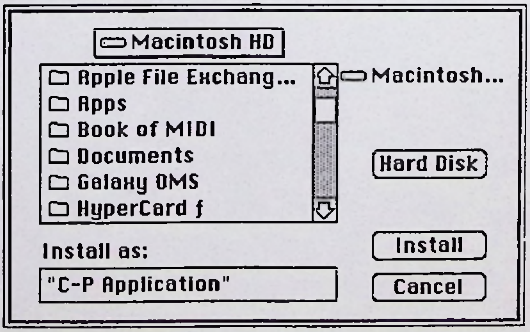
Installation Dialog Box

For the sake of this explanation, the general application name in these illustrations is "C-P Application" for copy protected application, since these instructions apply only to copy-protected software, such as Vision, Studio Vision, and Galaxy.

- Click the **Install** button.

*NOTE: The **Launch Master** button will run the application from the original master disk. However, this is not recommended. You should use copies made from the original master whenever possible. **Launch Installed** will run a hard disk installed copy of the program.*

- Choose the disk and the folder where you want to install the application, using the standard Macintosh file-saving dialog box. Click **Disk** or **Hard Disk** until the name of the hard disk you want to install onto appears.



Install as:
"C-P Application"

Standard Save Dialog Box

- Choose the folder in which you want to keep the application.
- Click the **Install** button again to begin the installation. After a few seconds, the Macintosh will confirm the installation.
- The first installation dialog box will reappear. Click **Finder** or **Quit** to exit.
- Eject your master disk, and write-protect it by sliding the tab in the upper right corner so it opens the little hole.

NOTE: Although Opcode does not recommend it, you can drag a copy of a copy-protected application (called a "drag-copy") from the floppy master disk onto your hard disk instead of installing. Every time you run the copy you will be asked to insert your master disk before continuing. The Macintosh will eject the master disk after a few seconds, once it has validated the copy.

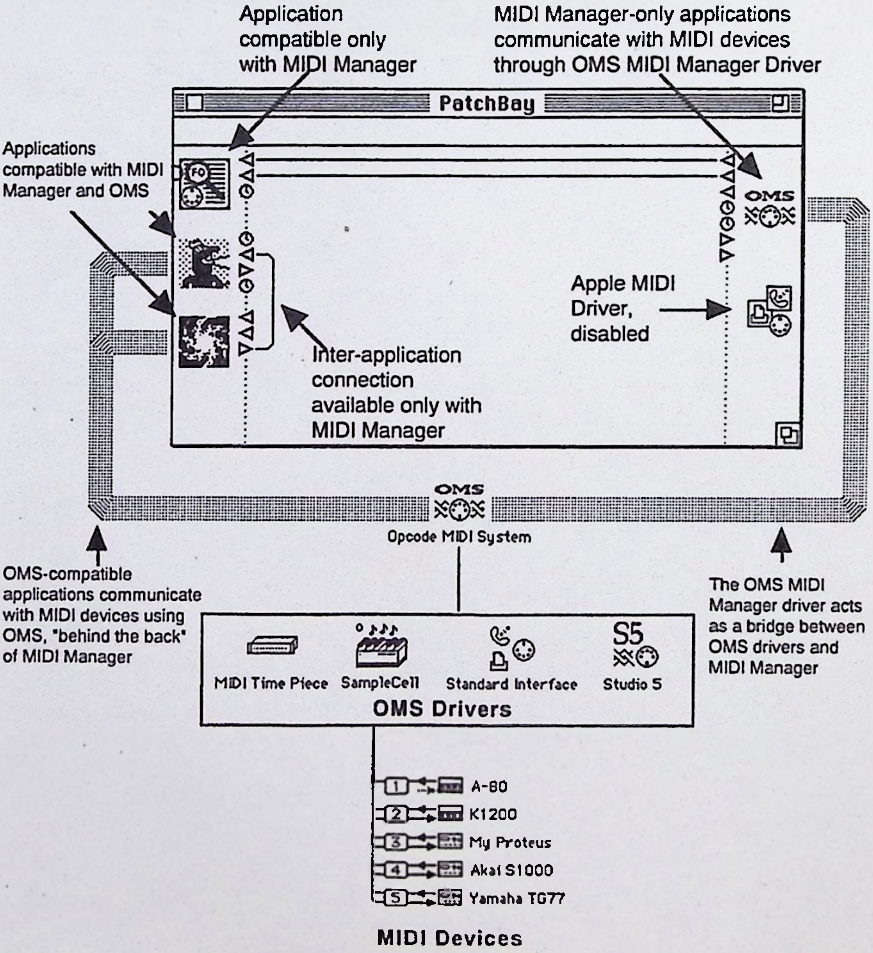
De-Install Applications

To de-install an application from a hard disk:

- Start your Macintosh from the hard disk as usual.
- Insert the master disk into your disk drive.
- Double-click the disk icon so that you can see the contents of the floppy disk.
- Double-click the application as if you were going to run it from the floppy master. You see the same dialog box as when you install.
- Click **Remove**. Locate the hard disk installed application to be de-installed using the standard Macintosh file selection dialog box.
- Click **Remove** again to begin the removal. After a few seconds, the Macintosh will confirm the de-installation.
- The first installation dialog box will reappear. Click **Finder** or **Quit** to exit.
- Eject your master disk, and write-protect it by sliding the tab in the upper right corner so it opens the little hole.

4 OMS and MIDI Manager

OMS can be either an alternative to MIDI Manager or an addition. It provides many of the same benefits without the disadvantage of slowing down your computer. However, unlike MIDI Manager, OMS does not make provisions for inter-application communication (IAC). OMS by itself does not manage timing information for synchronizing multiple applications and can only allow one application at a time to use the Macintosh timing capabilities. OMS and MIDI Manager work together so you can take advantage of the unique features of each.


Application compatible only with MIDI Manager
MIDI Manager-only applications communicate with MIDI devices through OMS MIDI Manager Driver
PatchBay
Applications compatible with MIDI Manager and OMS
OMS
Apple MIDI Driver, disabled
Inter-application connection available only with MIDI Manager
OMS
Opcode MIDI System
OMS-compatible applications communicate with MIDI devices using OMS, "behind the back" of MIDI Manager
The OMS MIDI Manager driver acts as a bridge between OMS drivers and MIDI Manager
S5
MIDI Time Piece
SampleCell
Standard Interface
Studio 5
OMS Drivers
1 A-80
2 K1200
3 My Proteus
4 Akai S1000
5 Yamaha TG77
MIDI Devices

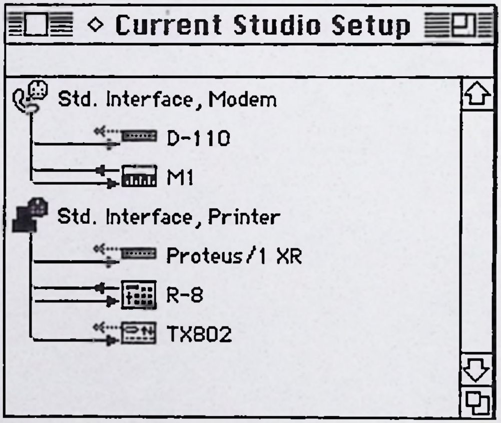
When operating with OMS in the Use **Apple MIDI Manager** mode, it is unnecessary to connect OMS compatible applications to the OMS MIDI Manager driver. These connections are already made "behind the back" of MIDI Manager by OMS. OMS compatible applications have MIDI Manager ports to communicate to one another (record a parameter change from an editor into a sequencer track) and to other MIDI Manager applications.

USING MIDI MANAGER

This section shows examples of a simple Studio Setup document, a configured OMS MIDI Manager driver, and PatchBay configured with OMS communicating with a fictitious MIDI Manager sequencer "S" in PatchBay. You'll configure the OMS/MIDI Manager driver setup window and connect a MIDI Manager sequencer in PatchBay.

Before you continue, first make sure no MIDI applications are running, then remove Apple MIDI Driver from your System Folder, if it's there.

The Studio Setup Document



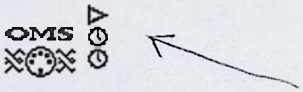
Current Studio Setup document

In this Studio Setup document all devices are connected to the ports of a standard MIDI interface. The M1 and R8 are controllers with on-board sequencers that send and receive sync (MIDI clock). The D-110, Proteus/1 XR and TX802 are multitimbral sound modules.

OMS MIDI Manager Driver

The OMS MIDI Manager Driver, like other MIDI Manager drivers, must be in the System Folder when the first MIDI Manager application or DA is opened. It is automatically placed there if you used the OMS Installer 1.0 and chose MIDI Manager as one of the items to install. The OMS MIDI Manager driver will not sign in to MIDI Manager and not show up in PatchBay if OMS isn't installed in your System folder.

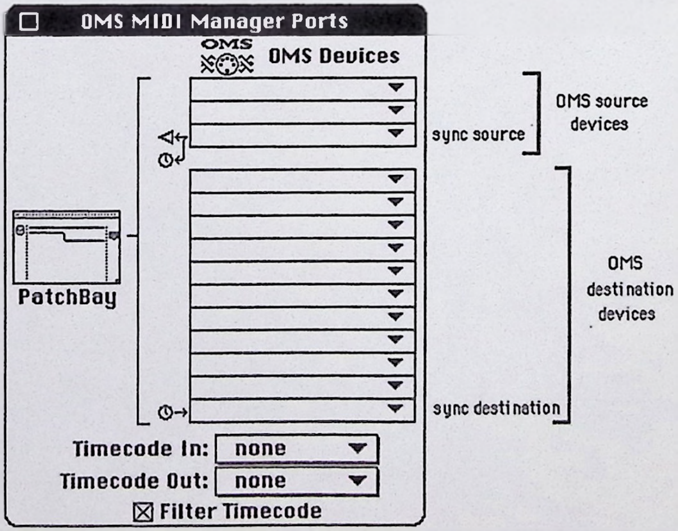
- Launch the PatchBay application or desk accessory.



OMS MIDI Manager Driver, as seen in PatchBay™

The OMS MIDI Manager driver lets you choose up to 3 OMS sources and 11 OMS destinations to connect to MIDI Manager applications or other drivers. These OMS sources and destinations appear as ports (little triangles) next to the OMS MIDI Manager driver icon in PatchBay. If you are using applications that are MIDI Manager compatible but not OMS compatible, this is how they would communicate to MIDI devices connected to OMS drivers.

- Double-click the OMS MIDI Manager driver's icon to open the OMS MIDI Manager setup window.



Timecode In: none
Timecode Out: none
☒ Filter Timecode

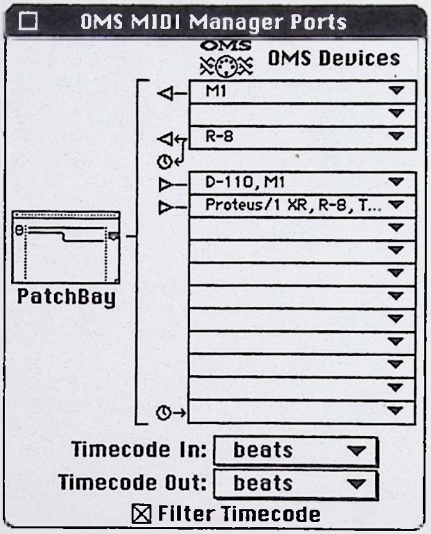
OMS MIDI Manager Driver Setup Window

The first three pop-ups in this window (labeled "OMS source devices") are used to connect OMS sources to MIDI Manager ports (little triangles in PatchBay). These are sources of MIDI and therefore would be inputs from OMS to PatchBay and MIDI Manager compatible applications.

The next eleven pop-ups in this window (labeled "OMS destination devices") are used to connect OMS destinations to MIDI Manager ports (little triangles in PatchBay). These are destinations of MIDI and therefore would be outputs from PatchBay and MIDI Manager applications to OMS devices.

Each pop-up menu allows multiple selection. Select a device to enable it; it will appear checked. Select it again to disable and uncheck it.

Configuring the OMS MIDI Manager Setup Window



OMS MIDI Manager Ports

OMS Devices

M1

R-8

D-110, M1

Proteus/1 XR, R-8, T...

PatchBay

Timecode In: beats

Timecode Out: beats

☒ Filter Timecode

Configured OMS MIDI Manager Driver

Sources

The first two pop-up menus list all devices in your current Studio Setup document which have been defined as controllers.

- Click on the first source pop-up and choose M1 from the available devices.

When you select a device from this pop-up, a small triangle appears to the left of the pop-up indicating that a MIDI Manager port was created in PatchBay. The name of the MIDI Manager port will be the list of devices chosen in this pop-up. Pop-ups with no device selection will not create a MIDI Manager port in PatchBay.

- Click on the third source pop-up and select R-8 from the available devices.

This is the sync source pop-up; only devices defined as sending sync in the current Studio Setup document are choices here. The device chosen in this pop-up will drive the top clock icon of the OMS MIDI Manager driver in PatchBay (if Filter Timecode is checked in the bottom of this window).

- Choose the sync type (beats in this case) from the Timecode In pop-up menu.

Destinations

The pop-up menus show potential destinations of MIDI as defined in the current Studio Setup document.

- Click on the first of the eleven destination pop-ups and select the devices that are merged into the Modem port (the D-110 and M1).

Since these devices are split from the same output port in the current Studio Setup document, they will appear as one selection, with a comma between devices.

When you select a device from this pop-up, a small triangle appears to the left of the pop-up indicating that a MIDI Manager port was created in PatchBay. The name of the MIDI Manager port will be the list of devices chosen in this pop-up. Pop-ups with no device selection will not create a port in PatchBay.

- Click on the next destination pop-up and choose the devices that were merged into the printer port (the Proteus, R-8 and TX802).

The eleventh pop-up (labeled sync destination in the preceding figure) allows you to choose multiple OMS destinations to receive sync from PatchBay. Only devices that receive sync as defined in the current Studio Setup document will appear in this pop-up. The selections in this pop-up receive timecode from the lower clock icon of the OMS MIDI Manager driver in PatchBay. Choose the sync type from the Timecode Out pop-up menu (these are the same choices that MIDI Manager provides.)

Sync

- Click the box, Filter Timecode, so that the box is checked.

☒ **Filter Timecode**

When Filter Timecode is checked, the device chosen in the the sync source pop-up will have all non-timing data filtered out and drive the clock icon. When Filter Timecode is unchecked, the device chosen in the sync source pop-up will drive the extra source port of the OMS MIDI Manager driver. The data from this port will contain unfiltered time code from the selected sync source. Unfiltered timecode contains timecode and any non-timecode/clock MIDI messages received from the selected sync source.

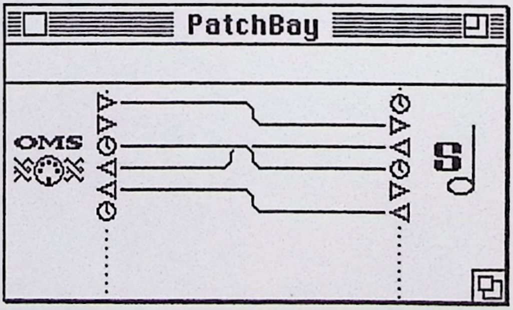
NOTE: Time ports don't appear in PatchBay, and the sync and timecode pop-up menus don't appear, unless you're using MIDI Manager version 2.0 or higher.

Bug

There seems to be a bug in MIDI Manager version 2.0 (only on some Macintosh models) which interferes with sending timecode out of the Macintosh (although sending beat clock works). If the OMS driver detects that MIDI Manager's version is less than 2.0.1, the timecode choices in the Timecode Out pop-up menu are disabled.

OMS MIDI Manager Ports in PatchBay

The way you configured this MIDI Manager driver, you created a source port that will route MIDI data from the M1 into PatchBay by choosing M1 from the pop-up of available MIDI devices. We chose the R-8's output to drive the sync source clock icon in PatchBay. Two destination ports exist to route MIDI from PatchBay to OMS devices. One port routes MIDI to the M1 and D-110; the other routes MIDI to the Proteus, R-8 and TX802.



PatchBay Connected to Sequencer S

In PatchBay the top port of the OMS MIDI Manager driver is the output of the M1. The next port is the source of unfiltered timecode. When you click on this port in PatchBay, you should see the port name, "Unfiltered Timecode," at the top of the PatchBay window. On some computers with certain versions of MIDI Manager, this name will not be shown.

Since we checked Filter Timecode in the OMS MIDI Manager setup window, the sync source device will have any non-timing data filtered out and drive the clock icon named sync source. In this example, the clock icon is driven by the output of the R-8.

The next two ports pointing toward the OMS MIDI Manager driver are destinations. The first destination port routes MIDI to the D-110 and M1; the next port routes MIDI to the Proteus XR, TX802, and R-8. In PatchBay, clicking on a port will display the port name in the top of the PatchBay window.

UNDERSTANDING OMS AND MIDI MANAGER

What is MIDI Manager?

MIDI Manager is a system extension developed by Apple to allow multiple MIDI applications to run simultaneously, sharing the Macintosh serial ports and timing capabilities. Using PatchBay, applications can be connected so you can perform operations like recording patch information from a librarian program into a sequencer's tracks.

In PatchBay, each application has ports, and you can route MIDI data from application to application, or to a driver (such as the Apple MIDI Driver or OMS/MIDI Manager driver) so that it goes to your interface.

One of the primary disadvantages of the MIDI Manager is that it uses more of your Macintosh's computing power.

NOTE: It is not recommended that you use the MIDI Manager on a Plus, SE, or Classic.

Why Use MIDI Manager With OMS?

The primary reason to use MIDI Manager with OMS is to use MIDI software that is MIDI Manager compatible, but not OMS compatible. Another reason that you might use MIDI Manager with OMS is to use a piece of MIDI hardware (a MacProteus, for example) that has a MIDI Manager driver—but no OMS driver—with an OMS application. Or you may wish to route MIDI from one application to another, for example, using Vision to record patch edits you make in Galaxy or a performance you create with Max.

What are Drivers?

MIDI Manager and OMS both have drivers, small programs in separate files. A driver gives MIDI Manager or OMS the ability to work with a specific kind of MIDI interface or device or a card inside your Macintosh.

OMS drivers are located in the OMS Folder, inside your System Folder. Currently, OMS provides drivers for Standard Interface (handles most MIDI interfaces), Studio 5, SampleCell, and the MIDI Time Piece.

MIDI Manager drivers are located in the System Folder. The Apple MIDI Driver is a driver for standard MIDI interfaces. Other MIDI Manager drivers are supplied by the manufacturers of the pieces of hardware they work with.

The OMS MIDI Manager Driver, which should be located in your System Folder in order for OMS to work cooperatively with MIDI Manager, is a MIDI Manager driver which acts as a "bridge" between MIDI Manager applications and OMS drivers (such as Standard Interface, Studio 5, SampleCell and MIDI Time Piece).

Using OMS Drivers

IMPORTANT: Before you continue, make sure no MIDI applications are running, then remove Apple MIDI Driver from your System Folder, if it's there..

The OMS MIDI Manager driver performs the same functions as the Apple MIDI Driver. If you have both drivers present in your System Folder, multiple drivers may try to access the serial ports and you may get alerts like "the port is in use." Therefore, remove the Apple MIDI Driver from your System Folder.

The OMS Standard Interface driver and MIDI Time Piece driver perform the same function as the Apple MIDI driver.

If you are using the OMS SampleCell driver, you should remove the SampleCell MIDI Manager driver from your system folder.

NOTE: The SampleCell MIDI Manager and OMS drivers actually can be used together if you take some precautions. (You may wish to connect a MIDI Manager-only application to SampleCell while using OMS applications.) The only trouble you may have is that OMS and MIDI Manager can't send to the SampleCell at the exact same time—if you try to do this, some MIDI messages may be ignored.

Generally speaking, if you are using an OMS driver for some device, disable any MIDI Manager driver that device may have.

Disabling OMS Drivers and Using MIDI Manager Drivers

Opcode doesn't recommend using MIDI Manager drivers instead of OMS drivers, however there may be occasions when you want to.

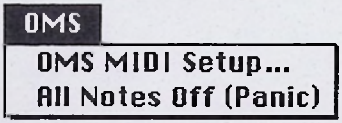
If you want to use a MIDI Manager driver instead of an OMS driver, there are two possible "work around OMS" strategies. One would be to exclude OMS from the world of MIDI Manager, which you'd accomplish by removing the OMS MIDI Manager driver from the System Folder, and not starting any OMS applications.

The other is to remove the conflicting OMS driver. OMS applications can communicate with the device through MIDI Manager. To use the Apple MIDI Driver, for example, you need to remove the Standard Interface driver from your OMS Folder.

After removing drivers from the OMS Folder, the driver will be disabled the next time OMS starts up. OMS drivers for devices that attach to the serial ports (Standard Interface, MIDI Time Piece, Studio 5) can be disabled more simply by using the OMS MIDI Setup dialog box (available in most OMS compatible applications' **Setups** menus) to uncheck Modem and/or Printer.

OMS MIDI Manager Driver OMS Menu

The **OMS** menu is accessible while the OMS MIDI Manager Driver's window is open.



OMS Menu

OMS MIDI Setup opens the standard OMS MIDI Setup dialog box, which is explained in more detail in Chapter 5, in the "Edit Menu" section. When you run a MIDI Manager application (such as PatchBay), this selection will automatically be set to **Use Apple MIDI Manager** mode (if the OMS MIDI Manager driver is in your System Folder).

All Notes Off sends note off messages on all MIDI channels to all MIDI devices.

PART TWO:
OMS Setup Reference

- Chapter 5: Studio Setup Editing
- Chapter 6: OMS Setup Menus
- Chapter 7: Tips and Troubleshooting

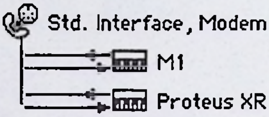
5 Studio Setup Editing

This chapter discusses special device connections, patcher configurations, and the MIDI Time Piece.

SPECIAL CONNECTION CONSIDERATIONS

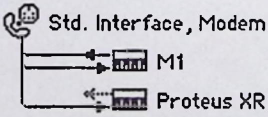
MIDI Merging

MIDI merging occurs when two independent MIDI data streams are combined into one. The following picture represents two MIDI devices connected to the Modem port of a standard MIDI interface.



Merging MIDI Ins

Since standard interfaces have only one MIDI In connector per Macintosh serial port, it is unlikely that both devices' MIDI Outs are connected to the Modem MIDI In of the standard interface as shown above. The picture therefore represents MIDI merging taking place and tells OMS Setup that MIDI Outs from both the M1 and Proteus XR are somehow connected to the Modem MIDI input of the interface. This is fine if the two MIDI data streams are merged by a MIDI merger device. If they are not merged, you should click on the directional arrow for the device that is not connected to the interface's MIDI In to remove that cable, indicating that there is no merging, as shown in the following illustration.

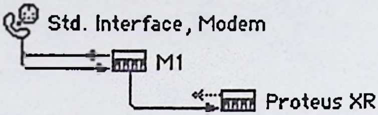


No Merging

In this case, no MIDI merging is implied. The M1 is the device that has both a MIDI In and MIDI Out cable connected to the interface; the Proteus XR can only receive MIDI data from the interface.

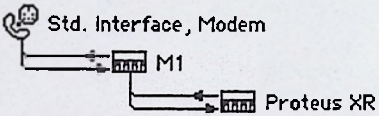
MIDI Thru

Some devices have MIDI Thru ports, which pass along the information present at the device's MIDI In. A MIDI Thru can be thought of as a source of MIDI. The following picture shows a device connected correctly to another device's MIDI Thru.



MIDI Thru Correctly Represented

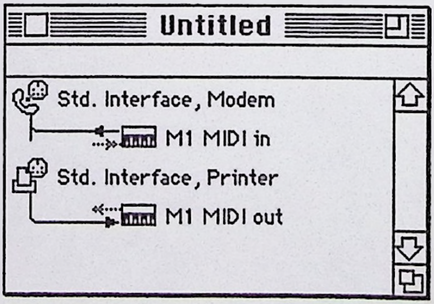
The following picture implies that both a MIDI In and Out are connected from the Proteus XR to the M1. This is possible if a device has multiple MIDI Ins or you are using a merger, and isn't necessarily incorrect. If your intention is to represent a MIDI Thru however, only one cable should be connected.



MIDI Thru Misrepresented

One Device Occupying Two Ports

If you are working with a standard two port MIDI interface and have a single device present on both Modem MIDI and Printer MIDI connectors of that interface, you will have to use two devices to depict this in the Studio Setup document. For example, if you have a device's MIDI Out connected to the modem MIDI In and the device's MIDI In connected to a Printer MIDI Out, you must depict this as follows:



A Single M1 Depicted with Two Icons

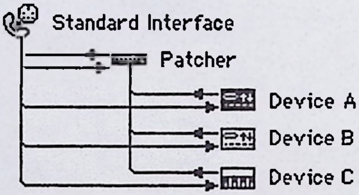
This Studio Setup document defines a single M1 using two device icons. The definitions are the same since it's the same instrument; only the names are different (OMS Setup does not allow duplicate names). If you have a device connected in this way, try to connect both the MIDI In and Out to the same side (Modem or Printer) of the interface. If this is impossible, depict this configuration as described above. (This isn't the recommended way of connecting devices, but it is a possibility.)

IMPORTANT: Devices connected to the Macintosh this way will not transfer patches with editor/librarian software. Connect both the MIDI In and Out or a device to the same side (Modem or Printer) of the interface for patch transfers.

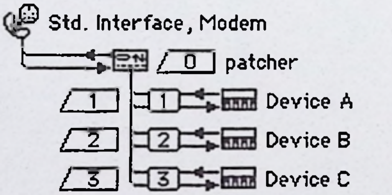
NON-STANDARD USE OF PATCHERS

This section discusses non-standard use of a patcher and a standard interface. If you connect both MIDI Ins and Outs of your MIDI devices to single ports on your patcher, you can skip this section.

The following illustrations show, on the left, an actual cable routing setup and, on the right, how you would depict such a routing using a Studio Setup document.



Actual MIDI Cable Routing



Equivalent Studio Setup Document

Although your studio may be set up similar to the illustration on the left, you must indicate it differently in the Studio Setup document. For example, you may have three devices that have their MIDI Outs connected to the patcher and their MIDI Ins connected directly to the standard interface. (Some people use their patcher in this way, sending program changes to the patcher, to route MIDI input to the Macintosh from a particular device. Every device is always available for output from the Macintosh.)

Although the MIDI output from the Macintosh to the devices does not run through the patcher, you must represent it as if it does because OMS Setup always deals with MIDI connections in pairs (1 input, 1 output).

MIDI TIME PIECE NETWORK CONFIGURATIONS

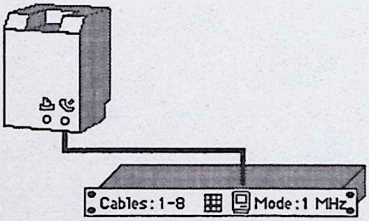
OMS has a MIDI Time Piece driver that allows OMS applications to use the MIDI Time Piece's fast mode and cable routing abilities. For the MIDI Time Piece to function, the MIDI Time Piece must be configured properly using the MIDI Time Piece DA, and your MIDI devices must be properly connected in the Studio Setup document. Make sure you consult the MIDI Time Piece manual, for details on using the DA.

The following sections discuss varying configurations; read the one that applies to your setup.

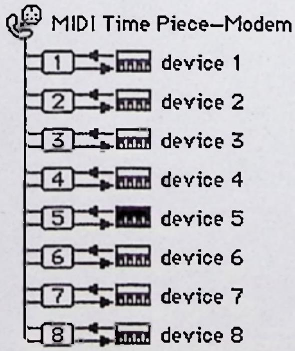
IMPORTANT: When using the MIDI Time Piece DA over an OMS application, you must set ***OMS MIDI Setup*** *mode to "Allow non-OMS Applications" in the application. If you do not do this you will probably get "There is a MIDI Transmission error..." or "Port in use..." alerts.*

One MIDI Time Piece With One Cable

If your Network Configuration looks like this in the MIDI Time Piece DA...

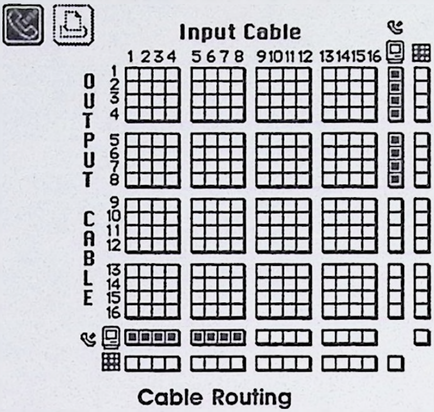


...your Studio Setup document will have the following interface icon.



You don't have to enter a device for each of the MIDI Time Piece ports (like in these examples); only for the ports you have devices connected to.

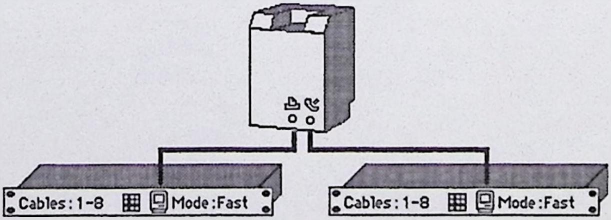
You should set your cable routing to look as follows:



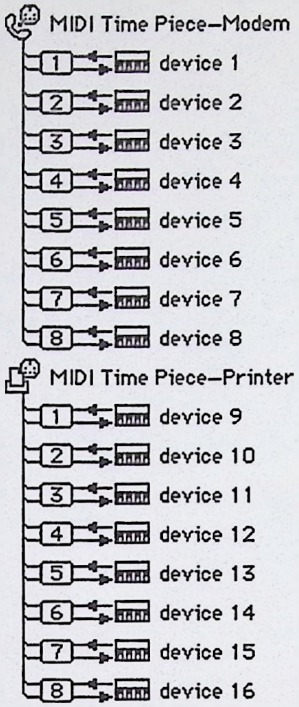
This routing is necessary for the MIDI information to get into the Macintosh and for MIDI information from Macintosh applications that don't work with the MIDI Time Piece to get all 8 cables. The Macintosh is routed to cables 1 through 8. Any other routing in this grid is up to your live performance or studio routing needs.

One MIDI Time Piece on Each Mac Port

If your network configuration looks like this in the MIDI Time Piece DA...



...your Studio Setup document will have the following interface icons:



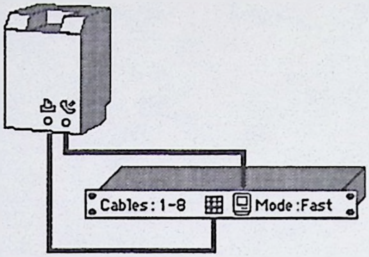
This configuration shows two individual MIDI Time Pieces connected to the Macintosh; no networking is taking place.

Click on the Modem and Printer pushbuttons in the top left corner of the routing grid and set the routing matrix for both Macintosh ports as shown in the first example. In this configuration, both MIDI Time Pieces must be set to use cables 1 through 8. If a MIDI Time Piece connected directly to the Macintosh serial port is set to 9 through 16, it will not be recognized by OMS Setup.

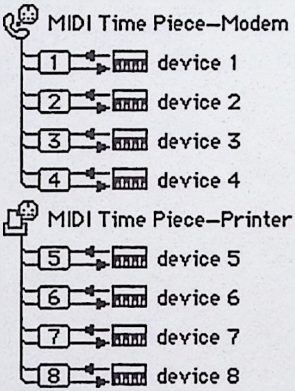
You don't have to enter a device for each of the MIDI Time Piece ports (like in these examples); only for the ports you have devices connected to.

One MIDI Time Piece With Two Cables

If your Network Configuration looks like this in the MIDI Time Piece DA...



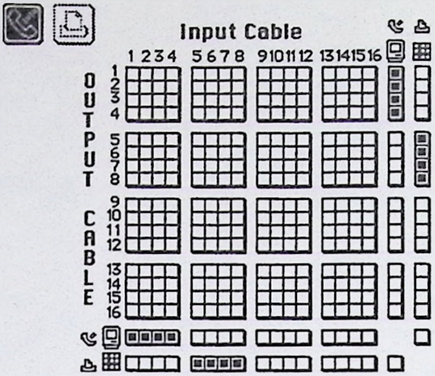
...your Studio Setup document will have the following interface icons.



MIDI Time Piece–Modem
1 device 1
2 device 2
3 device 3
4 device 4
MIDI Time Piece–Printer
5 device 5
6 device 6
7 device 7
8 device 8

The single MIDI Time Piece will appear as two icons in the Studio Setup document. While this may be confusing at first, it allows you to decide for yourself which of the two cables between the Macintosh and the MIDI Time Piece will carry the MIDI data for each of the eight MIDI Time Piece ports. Devices connected to "MIDI Time Piece—Modem" will communicate with the Macintosh through the Modem port and need to be set that way in the MIDI Time Piece DA cable routing grid. Devices connected to "MIDI Time Piece—Printer" will communicate with the Macintosh through the Printer port and need a corresponding routing grid also. If you're not sure what to do, connect 1 through 4 to the Modem and 5 through 8 to the Printer for now; you can always change things later.

For the Studio Setup document that displays four devices on each port, your cable routing grid should look like the following illustration.

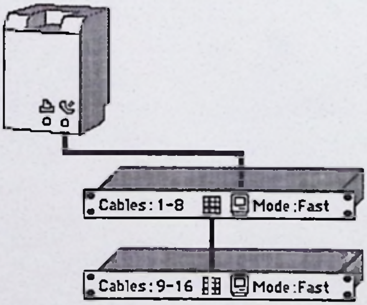


If you connected things in some way other than 1 through 4 to the Modem and 4 through 8 to the Printer, you need to make corresponding changes to the cable routing grid in the MIDI Time Piece DA.

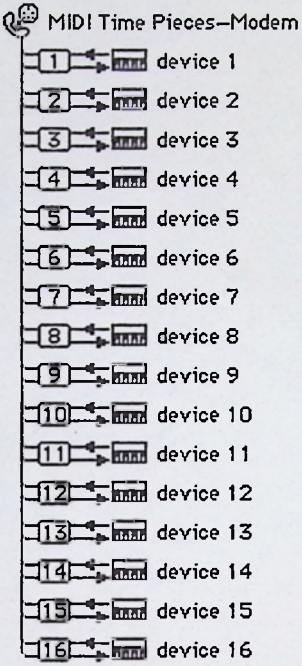
You don't have to enter a device for each of the MIDI Time Piece ports (like in these examples); only for the ports you have devices connected to.

Two MIDI Time Pieces Networked With Two Cables

If your Network Configuration looks like this in the MIDI Time Piece DA...

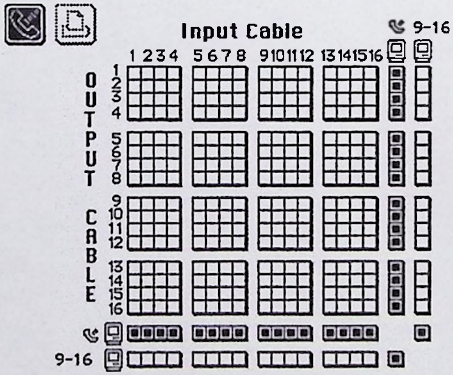


...your Studio Setup document will have the following interface icons.



MIDI Time Pieces–Modem
1 device 1
2 device 2
3 device 3
4 device 4
5 device 5
6 device 6
7 device 7
8 device 8
9 device 9
10 device 10
11 device 11
12 device 12
13 device 13
14 device 14
15 device 15
16 device 16

You should set your Cable routing to look as follows:

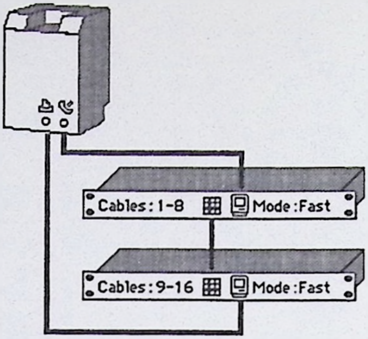


It is important to note here that one MIDI Time Piece is set to 1 through 8 and the other to 9 through 16.

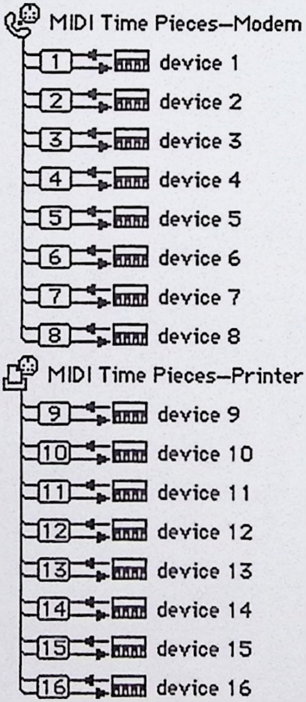
You don't have to enter a device for each of the MIDI Time Piece ports (like in these examples); only for the ports you have devices connected to.

Two MIDI Time Pieces Networked With Three Cables

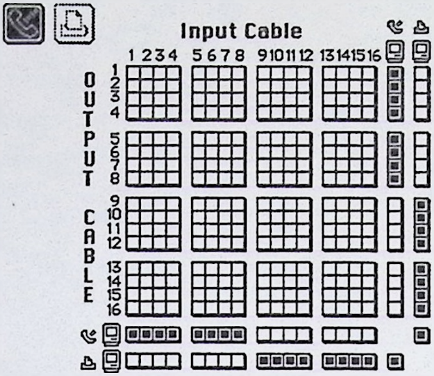
If your Network Configuration looks like this in the MIDI Time Piece DA...



...your Studio Setup document will have the following interface icons.



You should set your cable routing to look as follows:



In this configuration, it is possible to access all MIDI Time Piece MIDI ports 1 through 16 from either Macintosh port. It is important that you don't define multiple devices as occupying the same port in your Studio Setup document. You can see from the above Studio Setup document that there are only eight devices connected to each MIDI Time Piece.

You don't have to enter a device for each of the MIDI Time Piece ports (like in these examples); only for the ports you have devices connected to.

6

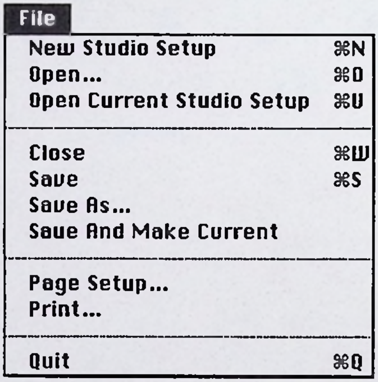
OMS Setup Menus

APPLE MENU

About OMS Setup...

This command opens a window that identifies the program, the version number, and the authors.

FILE MENU



File Menu

New Studio Setup ⌘N

Asks which ports to search for interfaces and use for MIDI and opens an untitled Studio Setup document window with the appropriate interface icons. When this command is selected, OMS informs you of its progress while it searches for MIDI interfaces and cards. Icons representing the devices and cards found will be displayed in the new Studio Setup document Use this command to create a new Studio Setup document.

Open... ⌘O

Opens a Studio Setup document. After choosing the command, a standard open dialog box appears giving you access to the Studio Setup documents on any available drive.

Open Current Studio Setup ⌘U

Automatically opens the Studio Setup document that was previously made current. If a Studio Setup document was never created and made current, this command will be grayed out and inaccessible.

Close ⌘W

Closes the currently selected Studio Setup document. If no changes have been made since the window was opened or since you last saved, it will be closed immediately. Otherwise, you will be asked if you want to save the changes.

Clicking **Save** saves any changes to the document and then closes it. (If the document is untitled you will be prompted to name it prior to saving.) Clicking **Don't Save** closes the document and does not save any changes. Clicking **Cancel** does not close the window.

Clicking in the close box of a window is the same as choosing the **Close** command.

Save ⌘S

Writes the currently selected Studio Setup document to disk. If the document does not have a file name, **Save** asks you to name the file.

Saving will be disabled if you have made no changes to a file; this prevents unnecessary saving.

Save As...

Performs the same operation as **Save** except that it opens the Standard Save As dialog box, enabling you to rename the document.

Save and Make Current

Writes the currently selected Studio Setup document to disk and makes that document the current one. If the document does not have a file name, **Save and Make Current** asks you to name the file.

If there have been no changes made to the file, this command will be displayed as **Make Current**.

The current Studio Setup document is the one that OMS applications, such as Vision and Galaxy, access for knowledge of your MIDI studio. The instruments contained within this current document will be the ones that appear in Vision and Galaxy.

Page Setup...

Opens the standard printing options dialog box. Here you can select options such as paper size, document reduction, and various other printer functions. The default values are generally acceptable for printing.

Print...

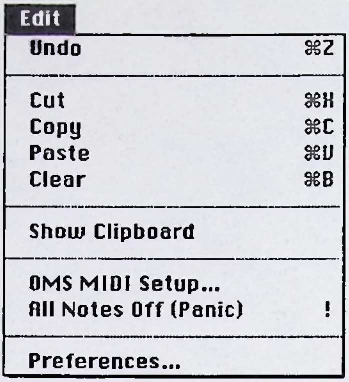
Prints the currently selected Studio Setup document to a printer connected to your Macintosh.

Quit

⌘Q

Closes all windows, and then returns to the Finder. If you want to save two or more untitled windows, it's a good idea to close them individually rather than just choosing **Quit**. If you choose **Quit**, each unsaved window will be brought to the front, and you will be asked if you want to save its changes.

EDIT MENU



Edit Menu

Undo

⌘Z

Reverses the effect of the last **Edit** menu command. The command to be undone is shown as part of the **Undo** command. After undoing a command, you can always redo it; the menu command becomes **Redo**.

Cut

⌘X

Copies the selected items in the currently active window to the Clipboard, and then removes them from the window. It is the same as using **Copy** followed by **Clear**.

Copy

⌘C

Copies the selected items in the currently active window to the Clipboard. The window remains unchanged.

Paste

⌘V

Copies items on the Clipboard to the currently active window. You can copy and paste devices and patch bays between Studio Setup documents. Interface icons can not be copied and pasted. When you select **Paste**, the Clipboard contents will be connected to whatever device that is selected in the Studio Setup document. If no device is selected, it will be pasted in the Studio Setup document, connected to nothing.

Clear ⌘B

Deletes the the selected items from the currently active window, but does not affect the Clipboard. Typing the Delete or Backspace key is the same as choosing **Clear**.

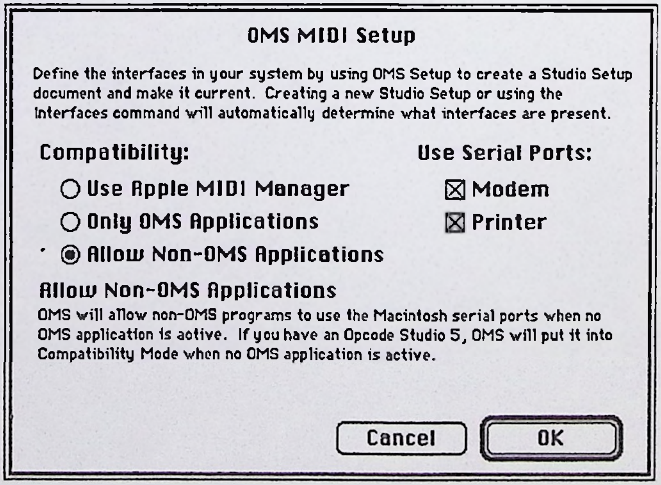
Show Clipboard

Opens a window showing the contents of the Clipboard. Items cannot be selected in the Clipboard window.

OMS MIDI Setup...

Opens a dialog box in which you tell OMS which Macintosh ports to use for MIDI and how to behave with other applications. OMS drivers for devices that attach to the serial ports (Standard Interface, MIDI Time Piece, Studio 5) can be disabled by using this dialog box to uncheck Modem and/or Printer.

The **Use Serial Ports** checkboxes can tell OMS not to use a serial port for MIDI. When **Allow Non-OMS Applications** is selected in the OMS MIDI Setup dialog box, OMS releases the serial ports when the active application is not an OMS application. You only need to uncheck a port when you want to use the serial ports for something other than MIDI while OMS programs are running (for example, printing), or OMS is in **Only OMS Applications** or **Use Apple MIDI Manager** modes and you have a non-OMS application running which needs a serial port (for example, a communication program).



OMS MIDI Setup

Define the interfaces in your system by using OMS Setup to create a Studio Setup document and make it current. Creating a new Studio Setup or using the Interfaces command will automatically determine what interfaces are present.

Compatibility:

○ Use Apple MIDI Manager

○ Only OMS Applications

● Allow Non-OMS Applications

Use Serial Ports:

☒ Modem

☒ Printer

Allow Non-OMS Applications

OMS will allow non-OMS programs to use the Macintosh serial ports when no OMS application is active. If you have an Opcode Studio 5, OMS will put it into Compatibility Mode when no OMS application is active.

MIDI Setup/Compatibility Dialog

There are three compatibility modes for OMS:

Use Apple MIDI Manager

OMS applications will also use Apple MIDI Manager. See the chapter entitled OMS and MIDI Manager for detailed information about this. When you launch a MIDI Manager application, OMS will automatically put OMS in this mode if the OMS MIDI Manager driver is in your System folder.

Only OMS Applications

When this is selected, OMS applications can continue to send and receive MIDI when they are not active. OMS conducts the MIDI data out of the Macintosh serial ports in such a way that all OMS applications can continue sending out MIDI data. In this mode OMS will not give up control of the serial ports when another non-OMS application is run.

Allow Non-OMS Applications

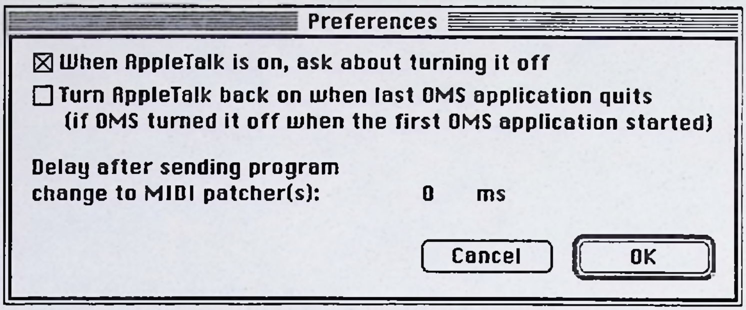
When this is selected, OMS will allow non-OMS applications to use the serial ports if the active application is not an OMS application. In this mode, OMS applications release control of the serial ports when a non-OMS application becomes active. Unlike when **Only OMS Applications** is selected, OMS applications will not be able to send and receive MIDI data (run in the background) while a non-OMS application is active.

All Notes Off (Panic) !

Sends out note off commands on all MIDI channels. This is used to silence stuck notes and takes a second or two to complete the task (longer if you have multiport interface such as a Studio 5 or a MIDI Time Piece).

Preferences...

Opens a dialog box that lets you configure certain aspects of OMS.



☒ When AppleTalk is on, ask about turning it off

☐ Turn AppleTalk back on when last OMS application quits (if OMS turned it off when the first OMS application started)

Delay after sending program change to MIDI patcher(s): 0 ms

OMS Setup Preferences Dialog Box

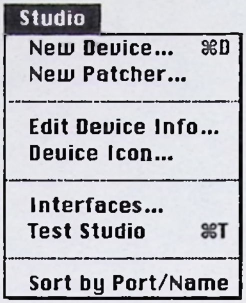
AppleTalk

You can choose to be alerted if AppleTalk is on when you are using any OMS application. You may also configure OMS to turn AppleTalk back on when the last OMS application quits (if OMS turned it off in the first place). AppleTalk being active in the Chooser can impair MIDI communication (particularly patch transfers). It is recommended that AppleTalk be inactive when using MIDI applications.

Patcher Delay

You can choose how many milliseconds you want to delay the transfer of MIDI data after sending a program change to a MIDI patcher. This is necessary because MIDI patchers take a small amount of time to rearrange their internal connections after receiving a program change message. OMS needs to wait before transmitting so that MIDI data following a program change is properly routed and transmitted through a patcher. If you are using a MIDI patcher and things don't seem to be working properly, try increasing the delay time. 50 milliseconds is a good place to start.

STUDIO MENU



Studio Menu

New Device... ⌘D

Opens a dialog box that lets you define a single MIDI device in your MIDI studio. MIDI devices may be synthesizers, drum machines, effect processors, and so on. Choose the device name and manufacturer from the pop-up menu or choose "Other" and type the name. Fill in the rest of the information as described in Chapter 2 of this manual.

New Patcher...

Opens a dialog box that lets you define a single MIDI patch bay in your studio. Choose the device name and manufacturer from the pop-up menu or choose "Other" and type the name. Fill in the rest of the information as described in Chapter 2.

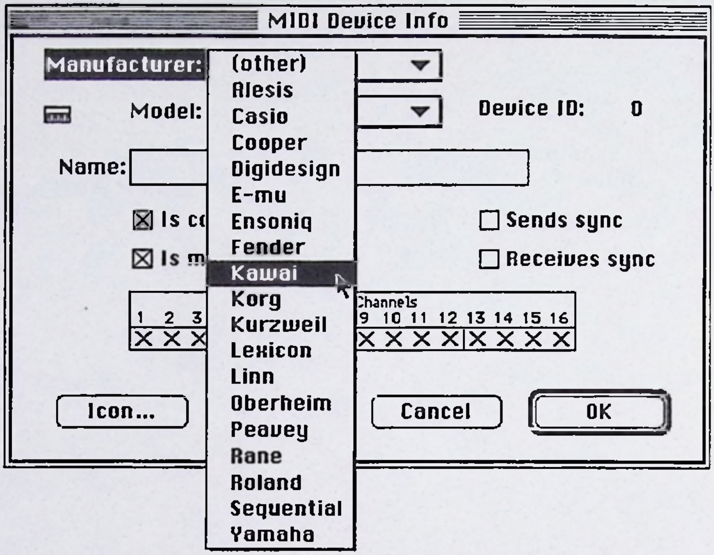
Edit Device Info...

Reopens the Define Device dialog for the currently selected device in the Studio Setup document so that you can change a parameter of a device. You can also double-click on the device icon in the Studio Setup document to reopen the Define Device dialog box.

NOTE: The following information applies to defining devices as well as to defining patchers.

Manufacturer and Model/Patcher

- Choose the manufacturer of the MIDI device or patcher by clicking in the Manufacturer field and choosing from the pop-up menu.



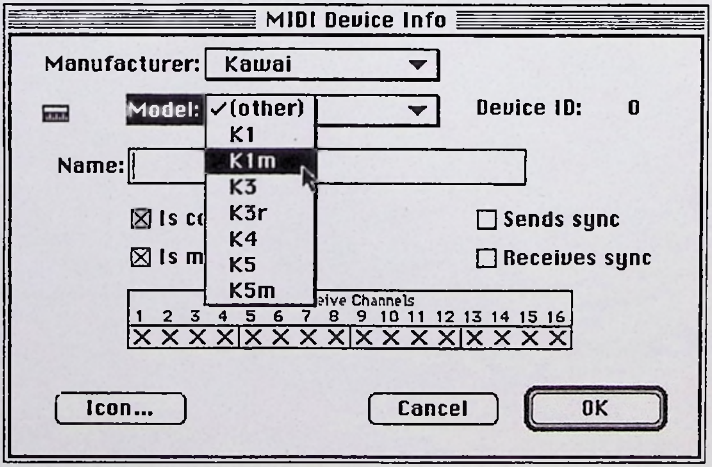
Device ID: 0

☐ Sends sync

☐ Receives sync

Choose the Manufacturer

- Choose the model name or number from the pop-up menu entitled Model.



Manufacturer: Kawai

Device ID: 0

☐ Sends sync

☐ Receives sync

Choose the Model

"Other" Name

If you can't find the manufacturer or model of a MIDI device or patcher that you own, select "Other", the default selection, in the pop-up menu and type the name of the device in the Name field.

Selecting from the Model menu automatically names the device with its model name, but you can change it to any name you like. Keep the name under 10 characters for best results in Vision. OMS Setup does not allow identical names in your Studio Setup document, although you may have multiple identical devices. These identical devices should have unique device IDs if possible.

Selecting from the Model menu assigns a default icon for the device and fills in **Is Controller**, and **Multitimbral**.

NOTE: If you are not certain how to define any of these parameters of your synthesizer or patch bay, consult your device's manual.

Is Controller

If the MIDI device that you are defining sends MIDI, other than system exclusive and sync, it is a controller and you should check this box.

Examples of controllers are: MIDI keyboards, guitars, wind controllers, most drum machines with pads. Controllers are things you play.

Examples of non-controllers are: tone generators and effects units.

Multitimbral

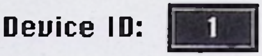
This means that the MIDI device you are defining can respond to MIDI on different channels at once. Newer synthesizers can play back several separate voices on different MIDI channels simultaneously. These instruments are called multitimbral. If you indicate in this dialog box that the device is multitimbral, you will be able to specify multiple receive channels. If you indicate that the device is not multitimbral, you will only be able to select one receive channel.

Receive Channels

This is the channel(s) on which the MIDI device responds to incoming MIDI. If the device is multitimbral, it will respond to MIDI on more than one channel. You should specify what those channels are by placing an X under the correct channel numbers 1 through 16. If the device is not multitimbral, it will respond to MIDI on only one channel, and you should X that channel. Some applications will only allow you to send MIDI to the device on the channels you enter here. You may wish to simply check all 16 channels for your multitimbral device.

Device ID

This is a standard term for a device's setting that uniquely identifies the device for system exclusive MIDI messages. In the same way that note information is communicated on a specific MIDI channel, system exclusive messages (generally patch information) contain a device ID specifying the device to which the data is directed. On some devices (usually older ones), there is a “basic” MIDI channel that also functions as a device ID. Instead of “device ID,” some manufacturers use the terms “MIDI ID,” “unit ID,” “unit number,” “global channel” “device number,” “system exclusive ID....” This information is used by librarian and editing software, such as Galaxy, to identify which device to communicate with.



Device ID: 1

For devices that you specify as not multitimbral, the device ID is assumed to be the same as the single MIDI channel the device listens to. The device ID field is only enabled for multitimbral devices.

If your synthesizer is not multitimbral, but has separate MIDI channels and system exclusive device ID parameters (for example, the DX7s), either make sure the unit’s device ID matches the MIDI channel, or tell OMS that the device is multitimbral, receives on one MIDI channel, and has a different device ID.

IMPORTANT: You must have the device ID set to the correct value for the proper operation of librarian programs.

Send Sync

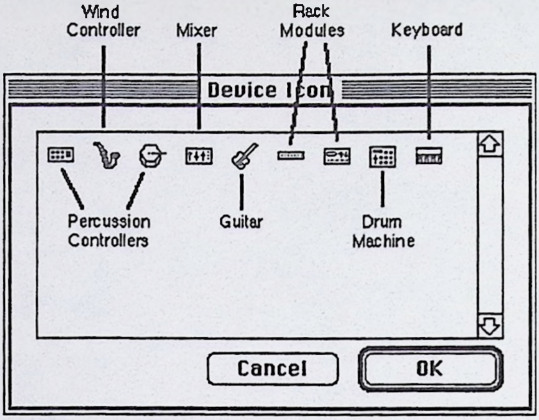
If the MIDI device sends sync information and you ever intend to slave another device or Macintosh application to that timing data, this box should be checked. Sync information may be MIDI clock, song position pointer, MIDI time code, or any other such data. Examples of devices that send sync are SMPTE generators, FSK to MIDI converters, hardware sequencers and synthesizers with on-board sequencers.

Receive Sync

If a MIDI device receives sync information and you ever intend for the device to slave to incoming timing data, you should check this box. Sync information may be MIDI clock, song position pointer, MIDI time code or any other such data. Examples of devices that receive sync are MIDI to FSK converters, hardware sequencers, and drum machines.

Icon

Clicking on this button opens a dialog box of icon choices for the device or patcher defined in the New Device or New Patcher dialog box.



Device Icons

Your choice determines what the icon for the device will look like in the Studio Setup document. You may choose any icon that you like, but it's recommended that the icon have some relationship to the function of the instrument. If it's a controller keyboard, then choose the keyboard type icon; if it's a sound module, choose the module type icon.

- Select an icon by clicking it, then click **OK**.

The icon device will be displayed into the Studio Setup document.

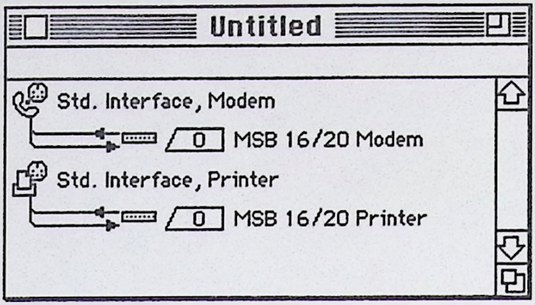
Ports (Patchers)

This number represents the number of pairs of MIDI ins and outs on your MIDI patcher. If there are more outs that ins (or vice versa), enter the larger number in the Define Patcher dialog box.

Send Program Changes To (Patchers)

This is a special feature you only need to be concerned with if you have one patcher connected to both Macintosh ports in your MIDI studio and when you click on devices in OMS Setup's **Test Studio** mode. This field will not appear if there is only one patcher in the document.

Studios with a large patch bay may have both Macintosh ports connected to their patcher to more evenly distribute the MIDI data. You should show this type of connection as follows:



Std. Interface, Modem

0 MSB 16/20 Modem

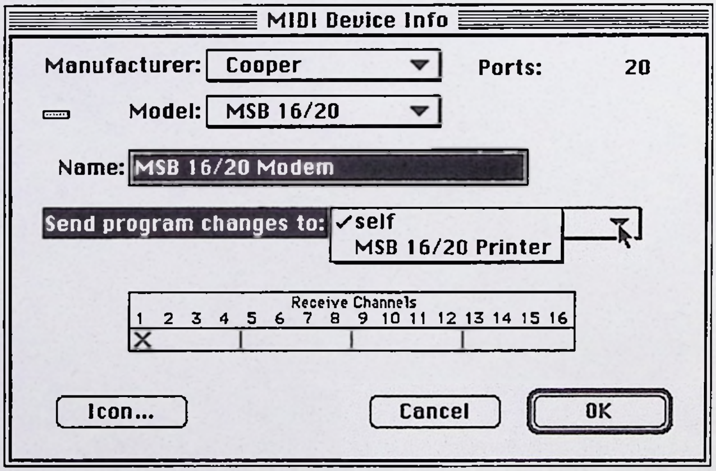
Std. Interface, Printer

0 MSB 16/20 Printer

One Patcher Defined as Two

In this configuration, a single patch bay is defined with two icons. MSB 16/20 Modem and MSB 16/20 Printer are really the same patch bay. This is done so that a single patch bay can be connected to both Macintosh serial ports.

MIDI patch bays generally only receive program changes on one of their MIDI ins. The “Send Program Changes to” pop-up menu allows you to specify which Macintosh port, and consequently which port on the patch bay, receives the program change.



Manufacturer: Cooper

Ports: 20

Model: MSB 16/20

Name: MSB 16/20 Modem

Send program changes to: ✓self

Receive Channels															
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
☒															

Send Program Changes to Pop-up Menu

Suppose you have an MSB 16/20 with port 15 on the patcher connected to the Modem port and port 16 on the patcher connected to the Printer port, and that the MSB only accepts program changes on port 16. For a program change to affect the MSB 16/20, you would have to select MSB 16/20 Printer in this pop-up menu.

In this example, the pop-up menu allows you to choose whether program changes are sent to the MSB 16/20 via the Modem or Printer port. Choosing "self" tells OMS to send program changes to the MSB MIDI in that is connected to the Modem port. Choosing "MSB 16/20 Printer" tells OMS that the MSB MIDI port connected to the Macintosh printer port is the port which receives program changes.

Receive Channels (Patcher)

Set this number to the MIDI channel on which your patcher responds to MIDI program change messages. OMS only sends patcher program changes when a program such as Galaxy needs to communicate patch information with a device and when you click on devices in OMS Setup's **Test Studio** mode. It does this by sending MIDI program change messages. You will need to consult the manual for your patch bay to find out how to set it up to react to MIDI program change messages. Some patch bays only respond to program change messages on one of their input ports; if this is the case with yours, make sure the Macintosh is connected to that port.

Device Icon...

Opens a dialog box from which you choose an icon for the currently selected device in the Studio Setup document. This is the same as option double-clicking the interface icon in the Studio Setup document.

Interfaces...

Modifies the Studio Setup document to contain the interfaces that are currently connected to the Macintosh. Interfaces no longer connected will disappear and devices connected to those interfaces will be unconnected.

Test Studio ⌘T

Puts OMS Setup into test mode, so you can test the accuracy of device definitions in the current Studio Setup document, and to determine if MIDI is getting to and from your MIDI devices. Selecting **Test Studio** again toggles OMS Setup out of test mode.

See Chapter 3 for details on test mode.

Sort by Port/Name

Rearranges the devices and patchers in your Studio Setup document numerically according to their port number and alphabetically according to their name.

7 Troubleshooting

Simplify Your Setup

If you are having a problem communicating to a particular device, try to isolate the device and communicate directly to it. Do this by connecting the device's MIDI in and out to your interface (bypassing any patchers) and trying again. This is especially helpful if you are having problems with patch transfers.

AppleTalk

Newer System software, versions 6.0.5 and 6.0.7, may crash if OMS is in **Use Apple MIDI Manager** or **Only OMS Applications** mode and you make AppleTalk active in the Chooser. It seems that the newer systems are not as polite about taking control of the printer port from other applications.

Startup Documents (INITs, CDEVs)

If your MIDI applications seem to be functioning improperly or you are experiencing system errors, check the contents of your system folder. System extensions (also known as INITs and displayed as "startup documents" in System 6) and Control Panel Devices (CDEVs) are common sources of incompatibility. The easiest way to determine if this is happening to you is to restart your Macintosh from a System Tools disk. This is one of the disks that you get when you purchase your computer. If you do not have these disks, system software is available from your Apple dealer, user groups, and electronic information services.

Restart your Macintosh and when you hear the system beep, insert the System Tools disk into your floppy disk drive; you will still be able to see the contents of your hard drive. Since you booted from the System tools disk, the offending Startup document should not be there.

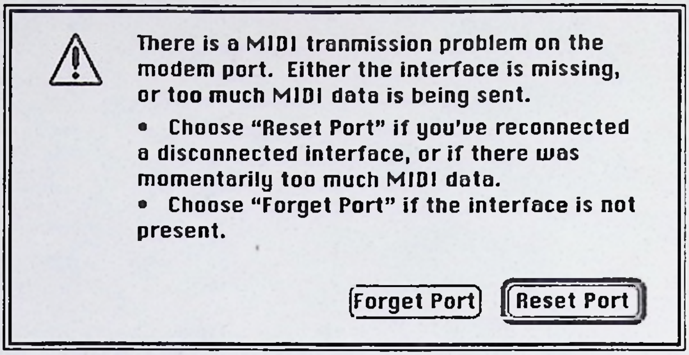
File Corruption

Another common cause of problems is application and file corruption. Disks are magnetic media; they are subject to damage by electromagnetic fields. Files, documents, and applications may become damaged on your hard drive or floppy disks. If you are experiencing crashes, system errors or other unusual strangeness, try to get a new copy of the application that you are using on your hard drive. For copy-protected applications this means either dragging a new copy onto your hard drive or de-installing and re-installing the application. For non-copy-protected software simply drag a new copy from your master disk onto your hard drive.

System files are also subject to corruption. You should also re-install your system software using the installer on the System Tools disk if re-installing the application does not work.

MIDI Transmission Errors

The following dialog box indicates some sort of problem with your interface.



There is a MIDI tranmission problem on the modem port. Either the interface is missing, or too much MIDI data is being sent.

- Choose "Reset Port" if you've reconnected a disconnected interface, or if there was momentarily too much MIDI data.
- Choose "Forget Port" if the interface is not present.

MIDI Transmission Error Dialog

A common reason this alert appears is that the interface is no longer connected to the port. It may also indicate that a switch on the front panel of your interface is incorrectly set. Check your MIDI/Thru switches and make sure that they are in the MIDI position, and check the cables connecting the interface to the Macintosh. After you check these things, click **Reset Port** to try to communicate over that port once again or **Forget Port** if you intentionally disconnected your interface.

Sync Problems

If you are syncing with SMPTE, there are a couple of things to consider. The level of the SMPTE on tape is crucial. Consult the manual of your SMPTE sync box for the level it should receive. If your SMPTE to MIDI converter is not recognizing your SMPTE signal or is syncing erratically, try manipulating the level of the SMPTE signal from tape. Do this by running the SMPTE through a channel of your mixer and increasing or decreasing the level. Note that equalization and noise reduction can alter and corrupt SMPTE signals.

If there is a mixer in the SMPTE signal path to your sync converter, ensure that the equalization is flat and that any noise reduction is defeated.

Index

A

Alert
    MIDI transmission error 66
All Notes Off (Panic) command 56
Apple menu
    About OMS command 51
Apple MIDI Manager
    use Apple MIDI Manager (see OMS MIDI Setup) 56
AppleTalk
    alert. 9
    does not allow MIDI communication on Printer port 9
    troubleshooting 65
    turn off/leave on alert (see Preferences) 57

C

Cables 6
Clear command 55
Clipboard
    paste 54
    show 55
Close command 52
Connect
    devices in the Studio Setup document 17
connect the Mac to the MIDI device 6
Controller
    define device 60
Copy command 54
Cut command 54

D

De-install
    copy-protected applications 25
    de-install copy-protected applications 25
Define
    devices 14
    patch bays 15
Device Icon command 64
Device ID
    define device 61
    definition of 61
Devices
    connect in Studio Setup document 17
    connecting to patchers 18
    define 14
    Edit Device Info command 58
    name 60
Driver
    definition of 34

E

Edit Device Info command 58
Edit menu
    All Notes Off command 56
    Clear command 55
    Copy command 54
    Cut command 54
    OMS Setup command 55
    Paste command 54
    Preferences 57
    Show Clipboard command 55
    Undo command 54

F

File corruption
    troubleshooting 65
File menu
    Close command 52
    New Studio Setup command 51
    Open command 51
    Open Current Studio Setup 52
    Page Setup command 53
    Quit command 53
    Save and Make Current command 52
    Save As command 52
    Save command 52
Filter Timecode
    sync option 32
Finder
    requirements 4

G

Galaxy
    install 23

H

Hard disk
    de-install application 25
    install applications 24
    install OMS using the Installer 4
    warnings for hard disk owners 23

I

Icons
    device icon choices 62, 64
IIfx Serial Switch
    install 5
Install
    copy-protected applications 23
    IIfx Serial Switch 5
    MIDI Time Piece 5
    OMS on a floppy disk 6
    OMS using the Installer 4
    OMS without the Installer 6
    SampleCell 5
    where items get installed using the Installer (see note) 5
Interface
    connect the Mac to the MIDI interface 6
    indicate serial ports using MIDI interfaces 10
    MIDI transmission errors 66
Interfaces command 64

M

MIDI Device Info dialog box 58
MIDI interface
    connect the Mac to the MIDI interface 6
    indicate serial ports using MIDI interfaces 10
MIDI Manager
    definition of 33
    disabling OMS drivers 34
    install 5
    OMS and MIDI Manager 27
    OMS MIDI Manager Setup window 30
    use Apple MIDI Manager (see OMS MIDI Setup) 56
    using the OMS/MIDI Manager Installer 4
MIDI merging
    indicating in Studio Setup 39
MIDI Thru
    connecting in Studio Setup 40
MIDI Time Piece
    connecting to devices 21
    install 5
    MIDI Manager driver 34
    network configurations 42
    port configuration 12
MIDI Transmission errors
    troubleshooting 66
Multitimbral
    define device 60
Name
    define device 60
New Device
    define 14
New Device command 58
New Patcher command 58
New Studio Setup command 51

O

OMS
    drag copy to hard disk 23
    install using the Installer 4
    install without the Installer 6
    introduction to 3
    MIDI Manager and OMS 27
    OMS MIDI Manager driver 34
    System and Finder requirements 4
OMS menu
    OMS MIDI Manager Driver 35
OMS MIDI Setup command 55
OMS Setup
    open 9
OMS Installer
    using 4
    where items get installed (see note) 5
Open command 51
Open Current Studio Setup command 52

P

Page Setup command 53
Paste command 54
Patch bays
    define 15
Patcher
    port assignments 19
    program assignments 20
Patchers
    connecting to devices 18
    edit patcher info (see Edit Device Info) 58
    non-standard use of 41
    patcher delay (see Preferences) 57
    send program changes 62
Port assignments
    patchers 19
Port Configuration
    MIDI Time Piece 12
    Standard Interface 11

Ports
    define patcher configuration 62
    indicate serial ports using MIDI interfaces 10
    MIDI transmission error 66
    OMS applications can allow non-OMS application to use serial ports (see OMS MIDI Setup) 56
    OMS applications can keep control of (see OMS MIDI Setup) 56
    OMS MIDI Setup 55
    open port configuration dialog box by double-clicking port icon 11
Preferences command 57
Print command 53
Programs
    patcher program assignments 20
    send program changes to patcher 62

Q

Quit command 53

R

Receive Channels
    define device 60
    define patcher 64
Receive Sync option
    define device 61

S

SampleCell
    configuration 13
    install 5
    MIDI Manager driver 34
Save
    studio setup document 13
Save and Make Current command 52
Save As command 52
Save command 52
Select
    items to install 5
Send Sync option
    define device 61
Show Clipboard command 55
SMPTE
    sync problems 66
Sort by Port/Name command 64
Standard Interface
    indicate port configuration 11
Stuck notes
    silence 56
Studio 5
    connecting to devices 21
    port configuration (see Studio 5 manual) 13
Studio menu
    Device Icon command 64
    Edit Device Info 58
    Interfaces command 64
    New Device command 58
    New Patcher command 58
    Sort by Port/Name command 64
    Test Studio command 64
Studio Setup
    connect devices 17
    connecting devices to patchers 18
    connecting the Studio 5 and MIDI Time Piece to devices 21
    define device 58
    define devices 14
    define patch bays 15
    edit device info 58
    introduction to 3
    MIDI merging 39
    MIDI Thru 40
    MIDI Time Piece network configurations 42
    non-standard use of patchers 41
    one device on two ports 40
    print document 53
    save setup document and make current 13
    testing 21
Studio Vision
    install 23
Sync
    filter timecode 32
    receive sync option 61
    send sync option 61
    troubleshooting 66
Synchonizer
    indicate interface 11
System
    requirements 4, 24
System errors
    troubleshooting 65

T

Test
    Studio Setup 21
Test Studio command 64
Timecode
    filter timecode (see sync) 32

U

Undo command 54

V

Vision
    install 23

W

Warning
    hard disk installation warnings 23

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